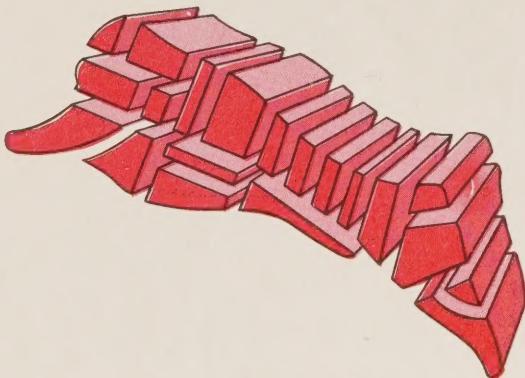


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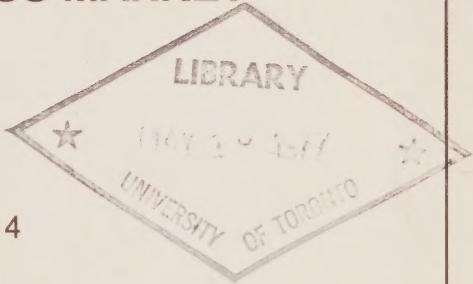
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**COMMISSION OF INQUIRY INTO THE
MARKETING OF BEEF AND VEAL**

**PERFORMANCE APPRAISAL OF THE
CANADIAN BEEF CARCASS MARKET**

Research Report No. 4
by
David J. Clarke



Ottawa
February 1976

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N O T E

The following research report was prepared at the request of the Commission of Inquiry into the Marketing of Beef and Veal to assist it in fulfilling its mandate. The analysis and conclusions contained in this report are the responsibility of the author(s) and do not necessarily reflect the views of the Commission.

FOREWORD

The author received considerable co-operation from beef processing, wholesaling and retailing firms in providing data through questionnaires and special requests and other information in personal interviews. This study draws heavily on the data and information in research report No. 1.

Dr. H. Fredeen, Agriculture Canada and Dr. Roy Berg, University of Alberta provided some of the technical information. Ralph Bennett, Mark Spearin, Arlene Pede and Dr. Sean Chin assisted with data collection and analysis. Ruth Goddard prepared the report for publication.

Ottawa
February 1976

H. Bruce Huff
Research Director

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1. INTRODUCTION

This project evaluates the performance of the beef marketing system in pricing and distributing carcass beef from packers to retailers in an equitable and efficient manner. In research report number one, the beef marketing system was described according to its structure, that is the size and numbers of participants, and its conduct, that is how these participants behave in the market. Given this structure and conduct of the industry participants, is their operational performance compared to their potential performance acceptable in economic and marketing terms?

Specific results of the structural analysis of the wholesale carcass market indicated that there are substantial barriers to entry at the packer, wholesale, and retail levels, and that there is vertical integration into the wholesale sector both from retail and from the the packer. The conduct of the participants was characterized by price leadership by a major packer on the supply side and concentrated buying power at the retail level. The purpose of this report is to analyze these structural and conduct characteristics to assess their effect on the performance of the market.

The performance of the beef market at the carcass level was selected by the Commission for special study because of the overriding importance of carcass trade in the beef marketing system, particularly the role of the Montreal wholesale carcass market. While the beef marketing system as a whole might be found to perform reasonably well in moving large volumes of beef to the consumer, there are areas of concern in the wholesale carcass market that require further consideration. These areas were chosen either a priori from discussions already conducted or were cited as probable problem areas in public testimony or private interview.

In Chapters 3 through 6 of the report, an analytical study is made of particular key performance objectives. An attempt is made to determine how successful the wholesale beef carcass market has been in meeting equity and efficiency performance norms. Practical criteria of a measurable nature were selected for testing. Both quantitative and qualitative analyses were used depending upon data availability and the appropriate evaluation techniques. In particular this part of the report specifically analyzes the efficiency and equity of wholesale pricing of carcasses in the various regions of Canada and the relative efficiency of distribution of carcasses to retail within Canada's two largest markets. For the purposes of this analysis, the wholesale price used refers to the price that wholesalers, including independent, retail and packer branch houses, pay for carcasses delivered to them from packers such as in Montreal. If there is no visible wholesaling entity, such as in the Toronto market, the wholesale price is that price retailers pay to packing plants for carcasses.

Chapter 7 discusses the effect on the performance of the whole-beef carcass market caused by the conduct of participants that are structurally integrated on a horizontal and vertical basis. This effect is first analyzed given the current levels of integration and secondly, given projected trends of integration. For purposes of this report, horizontal integration is described in terms of the relative size of major buyers and sellers. Vertical integration is described in terms of movement

of retail firms backward into the wholesale sector as wholesalers and the movement of packers forward into the wholesale sector.

No in-depth analysis of performance was made of the wholesale by-product market. The by-products markets generally deal in sales from the packer to processors. The only product going directly from the packers to the retailers are some of the large organs for edible purposes. As there is an international wholesale market for most by-products, a structured domestic intermediary wholesale market exists for most classes of by-products.

2. OBJECTIVES OF PERFORMANCE AND CRITERIA USED IN THEIR MEASUREMENT.¹

To analyze the performance of a market, it is necessary to establish objectives to measure its adequacy. Four objectives for measuring the performance of the carcass pricing system were chosen.² They are:

- equity of prices;
- pricing efficiency;
- distribution efficiency;
- allocation of benefits of new technology

Criteria for measurement of these objectives were established according to accepted economic principles.

Equity of Prices

In a market, this occurs when all buyers in that market pay the same base price for the same product. For this study's purpose, equity of prices in the wholesale carcass market implies first that prices paid for carcasses in the various regions of Canada should differ only by transfer costs from the region of supply. Thus, wholesale carcass prices in markets such as Toronto, Montreal, British Columbia and the Maritimes should differ only by the difference in transfer costs from the supply area. To quantify this criteria, wholesale price differences between Montreal and other regions for the various types of A grade carcasses were charted and compared with transfer costs between the regions.

Secondly, equity of prices implies that both carcass and live cattle prices between a supply region and a consuming region should differ by equivalent amounts for the same grade of cattle. This allows buyers to substitute the purchase of either carcasses or slaughter cattle from the surplus region. To evaluate this criteria, live cattle price differences and wholesale carcass price differences between Ontario and other regions were charted and compared to transfer costs of moving live cattle and carcasses to Ontario.

Thirdly, equity of prices in the beef market implies that there be substitutability among products of equal quality varying in price only

¹ Other performance measures examined are reported in the Commission's final report and in Research Report No. 2, Farm to Retail Price Spreads for Beef in Canada (Ottawa: Information Canada, February 1975).

² These objectives are linked to those chosen by the Commissioners for analysis of the overall effectiveness of the marketing system.

by any factors affecting the quantity of the final product produced. Within the regional markets, wholesale carcass price differences between Al steers and the other A grade types were charted. These differences were compared to the scientifically determined differences in retail value.

Pricing Efficiency

This is the ability of market prices to communicate any changes in supply and demand conditions. In effect there should be an immediate change in price to a new equilibrium level without any lag effects. Information should be available immediately to both buyers and sellers so that prices would change as warranted with no abrupt price corrections occurring. A multiple regression equation was estimated to determine the key factors affecting wholesale carcass prices in Montreal and to estimate how well prices in that market responded to weekly supply-demand changes.

Distribution Efficiency Within a Regional Market

This is the ability to physically distribute goods from wholesale to retail using the least cost method which is practical within that market. Carcass beef distribution from wholesale to retail in all markets should be of approximately equal cost. The costs and applicability of alternative methods of distribution within the Montreal and Toronto markets were analyzed.

Allocation of Benefits of New Technology

A market is progressive when it has the ability to quickly adopt new technology and to distribute the benefits of this innovation. In beef marketing, any benefits of a technological advance such as larger freight cars or centralized processing, should be passed on to consumers and/or producers. No component of the marketing chain should be in a position to resist adoption or to absorb benefits in the long term. Progressiveness was evaluated by an analysis of the allocation of benefits from the use of larger rail cars to ship beef from Western Canada to the Montreal wholesale market.

3. EQUITY OF PRICES

To evaluate the performance of the Canadian wholesale carcass market with regard to equity of regional prices, equity of prices between market levels and equity of prices between grade differentials, beef prices were studied for the period of January 1973 to June 1975. During that time, there were violent price swings in both the live and carcass markets thus providing circumstances that would test the ability of the market to perform. Price differences between regional markets were used to analyze equity of regional prices and equity of prices between market levels. The study period provided a particularly ideal basis for this type of analysis, since there was a rail freight rate freeze so that rates between markets remained constant. Therefore, by using a base price such as the Montreal market, the equity between it and other regional markets should be illustrated as a constant price difference. To evaluate if there was equity of pricing between grade categories, price differences were taken between the types of A grade carcasses within a market, using the Al steer as the base. These differences were then compared to the scientifically determined retail value of the various categories of carcasses. The Al steer was used as a base as it has been determined that it provides the highest retail value on average.

Equity of Regional Prices

Equity of regional prices in the wholesale beef carcass market, i.e. equal price for equal value, is applied to the situation when each area of consumption pays the same price for carcasses of the same quality, except for the transfer cost from the areas of source. If there is regional equity of prices for beef carcasses in Canada and if the Montreal market is the basing point for pricing beef carcasses as is often maintained, then prices in other regions should differ from the Montreal wholesale price only by transfer costs, i.e. prices in the Prairies should be the Montreal price less freight costs to Montreal.

Average quarterly price differences for carcasses between Montreal and Southern Ontario, Manitoba, Saskatchewan and Alberta were graphed. In the graphs, the Montreal base price is represented by the zero line and the price differences were graphed on the positive axis. If prices are less than Montreal, these are shown as positive value. Thus, the greater regional prices are below Montreal, the higher the price difference on the positive axis. If there were equity of prices among these markets over that period, the graph would consist of a series of parallel, horizontal lines, progressively higher the farther West the market, and in proportion to the greater freight rate to move beef from that market to Montreal. Also, as freight rates are based on a hundredweight of carcass, the price difference among these markets should be equal for all grades. The quality of the beef should have no bearing on the freight rate of the beef.

For the 1973-1974 period, freight rates between Southern Ontario and Montreal ranged between \$1.00/cwt. to \$1.50/cwt., between Manitoba and Montreal, \$2.00/cwt. to \$2.50/cwt. and between Saskatchewan and Montreal, \$3.00/cwt. to \$3.50/cwt. and from Alberta, it was approximately \$4.00/cwt. to \$4.50/cwt. These figures represent an average freight rate for the period as rates differ depending on the size of rail car used.

The regional price differences between the Montreal market and the four regional markets for five types of A grade carcasses are illustrated in Graphs 1 through 6.³ The results illustrate some interesting departures from the above expectations. First, overall there was considerable variation in price differences between all regions and Montreal for all types of carcasses. However, price differences did not vary by a common proportion. Secondly, the comparative variation for a grade type between one market and Montreal and another market and Montreal was not always of the same magnitude.⁴ Thirdly, the price differences varied considerably more for A3 and A4 steers than for A1 and A2 steers, and A1 heifers varied considerably more and in greater magnitude than A1 steers.⁵

The A2 steer market (Graph 2) shows the closest resemblance to the expected regional differences, however, not even this market operates with true price equity. Taking into account transportation costs described above, Prairie markets appeared to pay relatively equal A2 carcass prices but in relationship to Montreal, Prairie prices were too high.⁶ The price differences are in the right proportion for the three Prairie provinces but their difference from the Montreal price is less than the cost of transfer to Montreal. The Ontario price is generally higher than that in Montreal but there is some variation in the differences during the eight quarters.

³ All prices originate from the Agriculture Canada, Livestock and Meat Trade Report, except for Montreal prices which are from the R.N. Reynolds Newsletter.

⁴ As an example, the price for Alberta A2 steer carcasses varied from \$2.25 to \$4.00/cwt. below the Montreal price compared to a variation of \$0.0 to \$2.30/cwt. for Manitoba A2 steers, the former range of \$1.75/cwt., the latter a range of \$2.30/cwt.

⁵ As an example, Alberta A1 heifer prices ranged between \$2.10 and \$8.60/cwt. below Montreal while A1 steer prices ranged between \$.05 and \$2.30/cwt. below Montreal.

⁶ It would be expected that the difference in carcass prices between Montreal and the Prairie markets should be greater than the average cost of transportation between these centres due to the effect of the freight rebate being paid by Western packers to Montreal wholesalers.

A1 steer carcass price differences (Graph 1), similar to those for A2 steers, indicated that prices in local regional markets were higher than Montreal, and that prices in the various regional markets, particularly Alberta and Saskatchewan were often much higher than transfer costs alone would dictate. The price differences for A3 and A4 steers (Graphs 3 and 4) show even more variability and more independent regional movement than the A1, A2 prices. The A4 steer prices for regional markets did not appear to have any consistent relationship to Montreal prices.

Graphs 5 and 6 indicate that heifer prices in Canadian markets tended to maintain close to expected regional magnitude of differences. However, these price differences, while correctly ordered, did vary considerably, indicating that prices were affected by influences other than transfer costs. The variation in A1, A2 heifer price differences followed similar patterns. The Ontario heifer prices were below the Quebec market for most of the time period.⁷ The price differences graphed indicated that price levels in the Prairie markets ranged from being relatively higher to being relatively lower than Quebec prices for the period. Prairie prices were considerably below Montreal prices from the third quarter of 1974 to the second quarter of 1975.

These results imply that in many cases the carcass market is not performing satisfactorily to maintain regional equity of prices, as carcass prices in all Canadian markets do not reflect Montreal prices minus transfer costs. One reason for variation in these differences between markets may be attributed to inconsistent price reporting, both within and between markets, by firms to Agriculture Canada.⁸ Also, particularly for the A3 and A4 markets, these are thinner than the A1 and A2 carcass markets, which could permit buyers to exert considerable market pressure, especially at times of extreme over or under supply, thus tending to cause increased price difference variation.

In particular, the graphs indicate that there are regional market pressures over-riding the Montreal price, notably in Ontario and Alberta. This effect is most pronounced on the thinner market for A3's and A4's. For these grades, Montreal does not consistently maintain its position as a market leader for Canada. It should also be noted that throughout the period, Ontario prices often are higher than Montreal prices.

⁷ It should be noted that relatively few heifer carcasses are sold into the Montreal market.

⁸ Problems relating to carcass market price reporting are discussed in the Commission's Research Report No. 8. Market Information for Beef: Status and Problems (Information Canada)

In contrast to the Montreal market, the relationship of Western Canada A1 and A2 steer prices to Ontario showed relatively equitable prices for the last half of 1974 and into 1975 (Graphs 7 and 8). However, prior to that, the Saskatchewan market was relatively higher and the Manitoba market relatively lower than the Ontario market. The Alberta market, other than for the second quarter of 1974, remained equitable with the Ontario market. As with the Montreal comparisons, the A3 and A4 markets vary considerably and act independently from the Ontario market (Graphs 9 and 10). The A1 and A2 heifer markets maintained similar differences to that of the A1 and A2 steer markets (Graphs 11 and 12).⁹

For both coastal regions of Canada, price equity would be achieved if prices were equal to the supplying market's price plus transfer costs. As an example, the price in the B.C. market is generally considered to be the Alberta market price plus transfer costs to B.C. while the Maritime market is considered to be the Montreal market price plus transfer costs. The price differences were graphed similarly to the price differences in the preceding section. When complete equity of prices between the supplying market and the importing market for all grades is present, it is indicated by one single horizontal line representing the freight costs applicable to all carcasses of the same weight moving from the supplier to the coastal market.

Graph 16 shows the price spread between B.C. and Alberta for A grade carcasses. It is interesting to note that there is variation in the price difference between grade categories. However, the price differences between Alberta and B.C. for each category of A grade are generally of the same magnitude as transfer costs for 1973 and 1974 indicating that the B.C. market generally reflects Alberta prices plus transportation costs. Factors affecting price spreads appear to affect all grades in some manner (with periodic exceptions for A3). Graph 17 shows that price differences for all A grade carcasses between the Quebec market and the Maritime market are relatively uniform. However, the magnitude of the differences varied sharply during the period.

Equity of Prices Between Market Levels

Equity of prices between two regional markets for wholesale carcass prices and live cattle prices occurs when the live cattle regional price difference is equivalent to the wholesale carcass regional price difference. To be equivalent, live cattle price differences should be in the general proximity of 30 to 40 percent less per cwt. (depending on the carcass yield from the live animal) than the carcass price difference. For this analysis, the Ontario carcass market and the Toronto live market were used as the base and price differences were

⁹ The Ontario market has been a traditional user of heifer beef in contrast to the Montreal market.

established for the three Western Canadian regions for both carcass and live cattle and were compared.

Analysis for the A1, A2 steer carcass and the A1,2 live steer price differences between Winnipeg and Toronto and between Calgary and Toronto¹⁰ showed that both of these price differences generally moved in a similar pattern for the period and there was the expected size difference, i.e. live price differences were 30 percent to 40 percent less than the carcass differences (see Graphs 7, 8, 13). This indicates that both A1 and A2 steer carcasses and live A1,2 steers move between these markets at generally equivalent prices, permitting substitution between carcasses and slaughter cattle.

The Winnipeg and Calgary live and carcass prices for A3 steers moved in concert (see Graph 9, 14). However, the live price differences between Ontario and these markets were relatively greater and on average were absolutely greater than the carcass price differences. For the eight quarters of 1973 and 1974, the average difference between Calgary and Toronto for live A3 steers was \$3.13/cwt. and for A3 steer carcasses \$2.87/cwt. For Winnipeg and Toronto the averages were \$2.38/cwt. and \$2.21/cwt. respectively. A3 steer carcasses and live A3 steers do not move between these markets at equivalent prices. The A1 and A2 heifer carcass price differences and the A1,2 live heifer price differences between Ontario and the two Prairie markets moved in approximately the same direction and in the same magnitude throughout the period with live price differences generally lower than carcass price differences (see Graphs 11, 12, 15).

Analysis of the individual regional carcass markets and regional live markets revealed further price inequities. A comparison of the regional A1,2 live steer price differences indicated that the cattle producers in Southern Alberta and Manitoba received relatively higher prices than Ontario producers because the differences between these markets are less than the transfer cost to Ontario. As for A1, A2 carcass price differences, they were also relatively higher in Alberta than in Ontario as price differences between Alberta and Ontario were less than transfer costs. On the other hand, in the Edmonton and Saskatoon markets, producers received relatively lower prices for A1,2 cattle than Ontario producers, while retailers were paying relatively higher prices for A1, A2 carcass beef. The price difference between Saskatoon and Toronto for A1,2 live steers ranged between \$2.00 and \$5.10/cwt. for the period and the difference between A2 steer carcasses ranged from \$0.75 and \$3.50/cwt. (see Graphs 8 and 13).

¹⁰ Winnipeg and Calgary are the major live markets in Western Canada.

As shown in the A3 price comparisons above, A3 live price differences were somewhat greater than transfer costs to the East indicating that Western producers received relatively less for A3 steers than Ontario producers. On the other hand, the carcass price differences were considerably less than transfer costs of carcasses to Ontario indicating that Ontario retailers payed relatively less for A3 carcasses. Thus, there were also instances of price inequities among regions within the A3 live and carcass markets.

A comparison of A1,2 live heifer price differences showed Alberta producers were receiving relatively higher prices for their heifers than other Prairie markets and the Toronto market. This occurred because the live price difference between Alberta and Toronto was, on average, both relatively and absolutely less than the price differences between other Western centres and Toronto. A1 and A2 heifer carcass prices seemed to be in relative order with greater price differences the further from Toronto. The live and carcass A3 heifer markets appeared to be considerably more independent at the local level.

Grade Differentials Equity

The Canadian beef carcass grading system is based on the premise that quality of all A grade carcasses is similar and that these carcasses differ in value only with regard to the amount of retail beef they will produce. Within a particular market, equity of prices among the different grades and categories of beef produced would be achieved if price differences between these grades were of the same magnitude as the percentage ¹¹ differences in retail yield (cutability) established by scientific tests.

Average quarterly price differences of various A grade categories were calculated using A1 steers as a basis and graphed for the period January 1973 to June 1975. To represent price equity within a given market, these price differences should represent relatively horizontal lines of a constant difference relating to cutability differences and undulating only by the effect of applying percentage factors to different general overall market price levels.

On a scientific basis, heifer carcasses of the same weight and grade are considered of equal value to steers. However, not all trade people accept these results. Assuming that there are some minor differences in cutability of perhaps 1-2 percent, then A1 steer minus A1 heifer prices

¹¹ In a submission to the Commission's public hearings by Dr. H. Fredeen of Agriculture Canada, Lacombe Research Station, he reported that A1 carcasses have the best average cutability with A2's at approximately 2.2 to 2.5 percent less, A3's at approximately 3.4 percent less, and A4's at approximately 4.8 to 5.8 percent less than A1.

should also be slightly positive and relatively horizontal. As the optimal price differences are related to percentages between grades and not absolute differences, increases in the level of carcass prices will increase the optimal price difference between grades.

Montreal, Alberta and Ontario carcass market price differences for the A grade classifications are shown in graphs 18, 19 and 21. For all markets the A1 steer minus A2 steer price is relatively constant. A1 steer minus A1 heifer prices, however, show a great variation. This variation, nevertheless, tends to be a consistent pattern in all markets, particularly Quebec and Alberta. The A1 steer minus A4 steer price shows even greater variation ranging from \$2.00/cwt. to \$11.00/cwt. Again, the shape of the curves are generally similar for all markets.

The magnitude of the price differences indicates that the wholesale beef trade did not accept the A grade carcasses as substitutable in the same proportion as indicated by the scientific tests.
A1 and A2 steers differences are very small showing that they are generally priced together and there is no discount for A2 steers. The A1 steers minus A3 steers tend to have a flatter curve with less variation than for A4 or A1 heifers. However, the average price difference tends to be significantly greater than the 3.5 percent average difference in cutability determined by scientific testing. A1 steer minus A4 steer price differences indicate the greatest variation and seem to bear no relationship to scientifically established cutability differences. The difference between A1 steer prices and A1 heifer prices is very volatile and on average much greater than the scientifically established level.

It is concluded on the basis of this analysis, that for the period covered, A3 and A4 steers on average were overly discounted according to scientific criteria although A3 carcasses occasionally moved to a premium position, particularly in Ontario. Also, heifer carcasses were generally heavily discounted, particularly in the Montreal market. An important implication of this conclusion is that overly discounted carcasses may be purchased and trimmed for sale at considerable profit. As an example, if there is an average of 5 to 6 percent less retail cuts available from an A4 carcass than an A1 carcass but the wholesale price is 10 percent less, then the retailer could make a 4 percent gain in the available retail cuts by trimming the A4 carcass of its fat.

Equity of prices between A grade categories of live cattle were also analyzed. Price differences were adjusted to a carcass equivalent basis. Price differences were graphed for the Calgary and Toronto markets (Graphs 20 and 22). For the A3 and A4 categories, live price differences were less than what would be expected based on a scientifically determined

retail value, so therefore, actual price levels were too high. On a carcass basis (Graphs 19 and 21), however, as price differences were greater than what would be expected based on a scientifically determined retail value, price levels were relatively too low.¹² These deviations from the scientific norm are more pronounced in Toronto than in Calgary.

The behaviour of certain price differences during the period was analyzed to determine if there was correlation between the change in the difference and a change in levels of slaughter. The results, as listed in Table 1, indicate a strong positive correlation between the weekly heifer and steer price difference and the level of heifer slaughter. The strongest correlation occurs in the Alberta market where the correlation coefficient is 0.76 with no lag and 0.77 with a one week lag for prices. Thus, the level of heifer slaughter very much affects the discount level of A1 heifers under A1 steers. These results show that as the level of heifer slaughter increases, the difference increases. The correlation of Ontario steer-heifer price differences to Ontario heifer slaughter is not as strong but is still relatively high. The Quebec steer-heifer price differences are also correlated to heifer slaughter particularly heifer slaughter in Alberta.

The Montreal carcass market price difference between A1 steers and B steers appears to be strongly positively correlated to the Canadian level of B and C grade slaughter. In contrast, there is a comparatively weak correlation between A1 steer and A4 steer price differences and the level of A4 slaughter in all but the Alberta market. The Alberta market shows no correlation between the A1 and A4 steer price difference variation and A4 slaughter in Alberta.

These correlations suggest that there is some substitution between grade classifications within all markets. However, the price difference at which this substitution occurs is not constant. Also, discounts for substitution are considerably below scientifically determined levels. Market participants appear to have a particular prejudice against heifer carcasses and are only willing to substitute heifers for steers at a discount well above the scientifically determined basis. As the heifer kill increased, this discount increased. While these discounts were very high at the wholesale level, there is no evidence that these discounts were being passed on to the consumer.

¹² Thus the packer price difference for A3 and A4 is less than for A1, A2. Commission of Inquiry into the Marketing of Beef. Research Report No. 2, Farm to Retail Price Spreads for Beef in Canada. (Ottawa, Information Canada, February 1976)

Table 1: Estimated Correlation Coefficients for Weekly Price Differences and Beef Slaughter Quantities

<u>Price Difference</u>	<u>Slaughter Quantity</u>	<u>Correlation Coefficients</u>	
		<u>No lag</u>	<u>Lagged Price</u>
Ontario A1S-A1H	Ontario heifers	.66	.60
Alberta A1S-A1H	Alberta heifers	.76	.77
Quebec A1S-A1H	Alberta heifers	.63	.63
Quebec A1S-A1H	Canadian heifers	.61	.58
Montreal A1S-BS	Canadian B, C	.75	
Ontario A1S-A4S	Ontario A4	.27	.26
Alberta A1S-A4S	Alberta A4	.02	.04
Montreal A1S-A4S	Alberta A4	.33	.37
Montreal A1S-A4S	Canadian A4	.35	

Source: Commission estimates.

4. PRICING EFFICIENCY

The above analysis has shown that the Montreal market is not a consistent basing point for beef prices across Canada. Nevertheless its size and the price establishment process ensures that it is an important indicator market, especially for A1, A2 steers. Because of the importance of this market, it is essential that prices negotiated weekly in Montreal reflect the supply and demand conditions in all of Canada.

A test was made to see whether weekly fed (A grade) beef prices were accurately and consistently reflecting weekly supply-demand conditions in the beef industry during the January 1974 to July 1975 period.

Once A grade cattle are slaughtered, they must be sold quickly since their shelf life is quite short. Hence, the fed beef supply in any given week is fixed. To establish an equilibrium, weekly prices fluctuate so as to move all of the product into consumption. If supplies increase, prices must drop to absorb this increase.

Retail demand for fed beef in any given week can be higher or lower depending on prices of close substitutes such as pork and lower quality or non-fed beef. The level of meat promotions by Montreal supermarkets may increase their weekly demand in the Montreal market.

A multiple regression equation was estimated to ascertain the significant factors affecting beef prices in Montreal and their magnitude. Price used was the A1 wholesale steer price.¹³ Factors tested as to their influence on this price were weekly gradings of cattle, pork prices, price of D2 cows, number of pork cuts and number of beef cuts advertised by the six major Montreal supermarkets, and trade restraints on U.S. beef imports. Nine different quantities were used: A gradings in Canada, in Alberta and in the West, all gradings in the same three areas and all steer gradings in the same three areas. The results of the statistical estimation using the first six of these alternative quantities are shown as model one to six in Table 2.

Of the variables identified, only the beef advertising variable and the trade policy variables were consistently insignificant. Neither beef advertising in Montreal nor the government restriction on imports appeared to affect the price for beef in Montreal. Pork and cow beef prices were generally significant. A \$1/cwt. increase in wholesale pork prices was associated with an increase in steer prices of \$0.33/cwt., and a \$1/cwt. increase in wholesale D2 beef prices was associated with an increase in A1 steer prices of \$0.31/cwt.

¹³ Obtained from Reynolds Newsletter

Most of the different quantity (gradings) variables tested were significant, but A gradings explained the highest percentage of variation in weekly prices. The best predictor was A gradings in Alberta (Model 2). Their impact on price was relatively small. For example a one percent increase in A beef gradings in Canada would only cause a 0.25 percent decrease in Al steer prices (Model 1).

A significant aspect of the results was that the market appeared to remain out of equilibrium for several weeks before a correction was made. This is illustrated by the week-to-week error in price prediction. An incorrect prediction (either too high or too low) one week would likely be followed by an incorrect prediction of the same type the next week.¹⁴ Figure 1 shows that errors were positive or negative for a number of consecutive periods. It should be emphasized, however, that this test cannot be used as conclusive proof but simply as an indication of a disequilibrium position.

Nevertheless, it can be observed that wholesale prices in the fall of 1974 consistently exceeded the level that the model predicted. In February-April 1975, prices were consistently and substantially below what the model predicted, resulting eventually in a large market price correction of \$5 and \$15/cwt. in consecutive weeks in May 1975.

From these results, it can be inferred that the Montreal market does not appear to be adequately reflecting changes in supplies and market demands and remains out of equilibrium for considerable periods, necessitating large adjustments for eventual corrections.

¹⁴

In statistical terminology, the correlations of disturbance terms in period t and t-1 were high and positive. A correction of this problem of auto-correlation using the Hildreth-Lu procedure resulted in a Pbc value of 0.85. The coefficient of determination as a result jumped 0.70.

Table 2: Estimated Regression Coefficients for Weekly Price Prediction Model for All Steers, Montreal

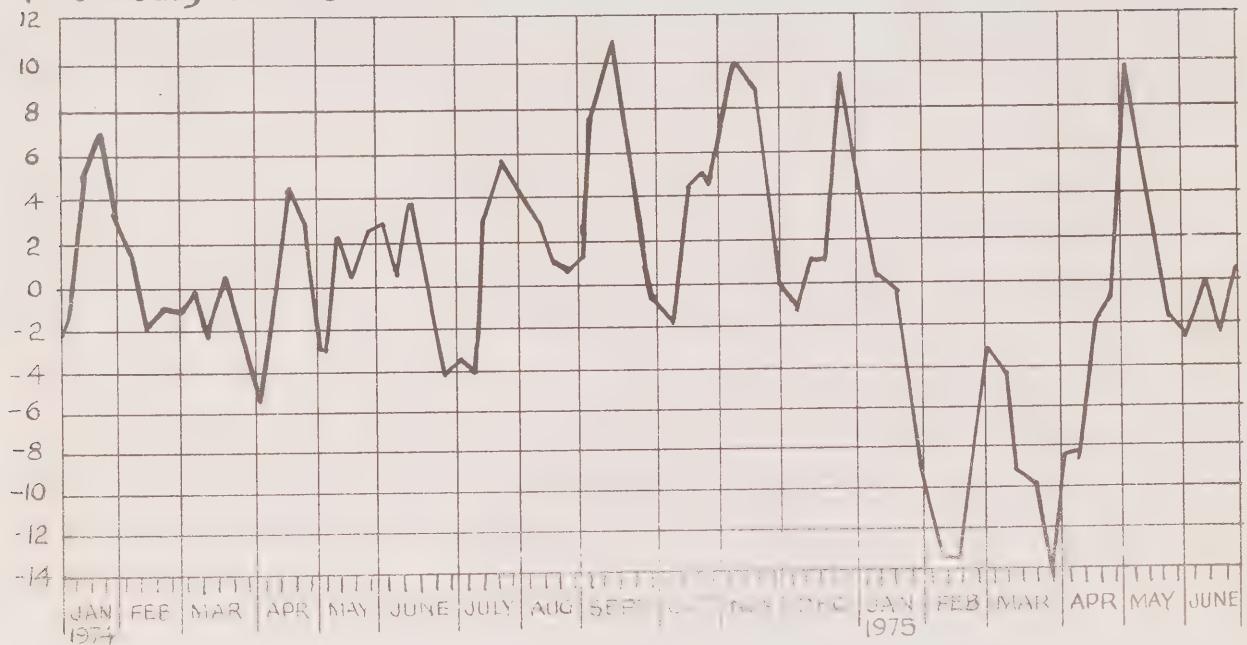
Model	Constant	A Grading			All Grading			Price			Pork			Beef			Free Trade			R^2
		Quebec	Ontario	Alberta	Prairies	Canada	Alberta	West	Pork	D2 cows	Ads	Price	Pork	Beef	Free Ads	Trade				
1.	79.11	-0.50	--	--	--	--	--	--	--	0.33 (.12)*	0.31 (.09)*(.08)*(.14)	-0.23 (.09)	-0.05 (.08)	-4.25 (2.24)	.33					
2.	80.27	--	-0.84 (.71)*	--	--	--	--	--	--	0.33 (.12)*	.17 (.09)	-.22 (.08)*(.13)	-.04 (.13)	-1.90 (2.03)	.35					
3.	82.82	--	--	-0.73 (.19)*	--	--	--	--	--	.31 (.12)*	.21 (.09)*	-.22 (.08)*(.14)	-.03 (.14)	-2.89 (2.06)	.36					
4.	77.74	--	--	--	-0.40 7.11%	--	--	--	--	.32 (.13)*	.30 (.10)*	-.24 (.08)*(.14)	-.08 (.14)	-4.18 (2.37)	.29					
5.	78.82	--	--	--	--	-5.5 7.71%	--	--	--	.34 (.13)*	.15 (.10)	-.23 (.08)*(.14)	-.08 (.14)	-1.55 (2.13)	.29					
6.	78.57	--	--	--	--	--	--	--	--	.37 (.21)	.14 (.11)	-.24 (.08)*(.15)	-.12 (.15)	-1.24 (2.18)	.25					

Notes: Standard errors in brackets

* Significant at .05 level.

FIGURE 1

Errors in prediction of prices in Montreal market using Model 1.
January 1974 - June 1975



5. DISTRIBUTIONAL EFFICIENCY

The operation of the wholesaling function for carcass beef has evolved quite differently within various regions of Canada.¹⁵ In the self-sufficient and surplus markets, the wholesaling activity is generally provided by either the packinghouses, or in some cases by the retail outlets themselves. In other words, the products move directly from the packer's cooler to the retail outlets. In deficit markets, such as Montreal and Vancouver, much of the wholesaling function is provided by separate wholesaling units. In such markets, independent firms and packer branch houses comprise an important element although retail chains are establishing their own wholesale units.

Shipments direct from packer to retailer outlets are more efficient than distribution through independent wholesale and packer branch houses simply because of less handling, storage and inventory control costs. In deficit markets, these types of wholesaling facilities developed because of the need for large storage capacity arising from beef being shipped long distances, in large lots, with unpredictable arrival times. Consequently, the wholesaler-retailer segments of the Montreal markets have evolved to operate quite differently than say the Toronto market. However, due to the structure of the Montreal wholesale sector, its distributional efficiency is often alleged to be much lower than Toronto. One method available to analyze the validity of this allegation is to compare the cost of delivery of Western beef to retail stores in each of these markets.

Initially, the movement of beef from the West directly to Toronto retail stores appears to be more efficient than the movement to Montreal retail stores via the wholesaler system.¹⁶ Available figures in a comparison of rail versus truck shipment costs between Montreal and Toronto show that once the beef has landed in Montreal and Toronto, there is a considerable difference in the cost of moving to the retail stores.¹⁷ These two different

¹⁵ For more specific details see Commission Research Report No. 1, Organization and Method of Operation of the Canadian Cattle and Beef Marketing System in Canada (Ottawa: Information Canada, February, 1976)

¹⁶ A special submission to the Commission by the Canadian Cattlemen's Association entitled "Freight Rebate to Montreal Market", was used as a reference in this analysis.

¹⁷ This section analyzes intra-market costs only. The comparison of transportation costs between the West and Toronto and Montreal will be analyzed below.

beef distribution systems were analyzed to establish the comparative distributive efficiency of moving beef within those markets.¹⁸ Due to the unavailability of the exact cost of moving beef in Toronto from the individual packers's slaughterhouse to individual retail outlets, an available alternative analysis is to compare the cost of movement of Western beef from the packer to the retail outlets in both of these markets.

Although highway transport has been chosen for analysis here, it is important to understand the various alternatives available to beef shippers moving beef from the packer, and the attributes of each system. Beef is generally moved by one of three methods to the Eastern markets - rail, highway transport or "piggy-back". The main advantage of trucking is flexibility, since it can unload at one or several locations given there are adequate unloading facilities. The current rate structure for multiple, direct store deliveries of beef allow a maximum of seven or eight dropoffs of a 40,000 lb. load. The basic disadvantage to both shippers and receivers is that quick turnaround times are demanded by trucking firms and therefore, the requirement of rather rigid loading and unloading schedules in comparison to rail cars.

The basic advantage of rail cars is their ability to carry larger loads and the greater time available at both packinghouse and the wholesaler for loading and unloading. This, in part, may be a result of less stringent management of rolling stock by the railroads and a less than optimal demeureage system. Rail running costs tend to be lower, thus, encouraging cheaper freight rates. The main disadvantage with rail cars is that they are quite cumbersome to spot and transfer. Therefore, it is not generally an agreeable practice to have multi drop-off unloading. Full loads are delivered at one location. The use of "piggy-back", a highway trailer on a rail flat-car, attempts to combine advantages of lower rates for rail and the flexibility of truck delivery.

After the beef has arrived in the wholesale position in each of these markets at relatively comparable prices, the method of distribution and its cost differs. In Montreal, there is a standard 3 cents per pound charge for moving from the wholesaler to the retailer. This charge has been negotiated between the Independent Wholesalers' and Packers' Association and the Montreal retailers. For this charge, the wholesalers receive carcass beef in rail cars or trucks, unload it into a warehouse and distribute it to the individual retail stores.

¹⁸ In the Toronto market, beef prices have been traditionally quoted on a delivered basis only. One packing company estimated the cost of delivering beef to individual retail outlets at 0.5 to .75 cents per lb.

In comparison, once the highway freight charges have been paid to Toronto,¹⁹ the cost of moving beef from wholesale to individual retail outlets is 0.7 cents per pound, which is the charge for an eight stop unload over a one stop unload. This 0.7 cents per pound charge represents a relatively low cost of moving beef into the retail outlets. The distribution costs for Western carcass beef in the Montreal market is 2.3 cents (3.0 cents - 0.7 cents) per pound higher than in the Toronto market.

From this simple description, it would appear that distribution in the Montreal market was much less efficient than the Toronto market and that considerable savings could be realized if the Montreal market was fully serviced by highway transport. There are a number of factors, however, that mitigate against the operational feasibility of such a proposal. First of all, the total beef that is handled and consumed each week must be considered. Shipments from the West constitute a very marginal proportion of the total loads consumed in the Toronto market. In the Montreal market, the vast majority of beef must be brought in from the West and large inventories must be maintained in comparison to the relatively self-sufficient Toronto market. The importation of such a large proportion of supplies creates a logistical problem as the beef arrives during a concentrated period in relatively large lots to take advantage of freight rates. It is then absorbed in smaller lots through distribution to individual outlets.

To receive this weekly influx of beef, and then to distribute it to the various sizes of retail stores, the Montreal market requires cooler space. Traditionally, this cooler space has been supplied by the wholesalers, in some instances using the rail cars for extra storage. Retailers tend to have limited cooler space as their outlets have traditionally received adequate beef delivery service from the wholesalers. Most importantly, it should be emphasized that only large retail outlets can take advantage of direct truck delivery. A 40,000 pound truck load carries approximately 60 to 70 carcasses at a time. On an eight stop unload, each stop must average eight to nine carcasses. For many small stores, this is not feasible as they do not even sell that many carcasses a week, let alone have sufficient storage space for them. However, there are stores that can easily accomodate that many carcasses or more a week.

¹⁹ It was assumed that a truck load of beef arriving in Toronto is in the comparable position in the marketing chain as beef delivered to a Montreal wholesaler.

In the Toronto market, the amount of carcass beef that is imported from outside is relatively small compared to that amount produced locally or in the Southern Ontario area. Delivery of beef is in smaller lots and takes only a matter of hours from the packer to the retailer. Packer delivery is on a frequent basis as they clear inventory to keep their coolers from over-flowing.

From this comparison it is apparent that the overall distribution efficiency of the Toronto market should be better by definition than that of the Montreal market, as Toronto does not require the wholesaler trade. However, it is also apparent that certain efficiencies of distribution could be introduced in the Montreal market. Although all beef could not be distributed directly in Montreal on the same basis that it is in the Toronto market, it is not necessary that all retail stores be serviced from wholesaler facilities. Large retail outlets, particularly those belonging to corporate and voluntary chains, could be serviced by drop-off from a piggy-back trailer, thereby reducing the 3 cents per pound flat charge.

This rationalization of the distribution system in Montreal is prevented in part as a result of the use of the common 3 cents per pound commission to move carcasses from the wholesaler to the retail outlet. Consequently, the benefits of any improved efficiency which would accrue to consumers or producers cannot be realized. It acts to maintain an inefficient service that is not required by all the retail trade which forces a common price to all retailers, large or small, who in turn pass this on to all consumers. In a competitive market situation, it is generally expected that the most efficient distribution system would be adopted, such as larger retail outlets taking direct delivery of beef. These stores would then have a competitive advantage over other stores not equipped to used such service. The retailers who cannot take advantage of such efficiencies would have to use the services of wholesalers and they would be expected to pay a premium for beef from them. Thus the present 3 cents charge subsidizes the smaller retailer outlets at the expense of the large retailers.

More importantly, however, the non-competitive common 3 cents charge tends to keep the more inefficient wholesalers operating while at the same time permitting wholesalers operating more efficiently to absorb part of the charge as profit. This situation includes all wholesalers: independent, retail or packer-owned. There is evidence of the efficiencies to be made in the Montreal beef distribution system shown by the backward integration of retailers into the wholesaler sector. Firms such as Steinberg's, Boeuf Merite and Provigo obviously feel that they can distribute beef more cheaply than 3 cents per pound, otherwise they would continue to use the independent and packer wholesalers rather than operating a wholesale unit of their own.

6. ALLOCATION OF BENEFITS OF NEW TECHNOLOGY

With the introduction of new technology into a price competitive marketing system, benefits should accrue to either the consumer or the producer according to the demand and supply situation within that market. Benefits should not be absorbed by an intermediary firm if competition prevails. Innovative firms adopt the new technology and other firms are forced to follow so that the savings are passed on through the marketing chain. The introduction of large mechanical freight cars for the shipment of beef carcasses from the West to Montreal is an example of the innovation of cost-reducing technology. The distribution of the benefits of their introduction, however, has been a point of contention for some time.

Traditionally, beef moved from Western Canada to Eastern Canada in small, ice cooled, 33,000 lb.-capacity railcars. Wholesaler facilities in Montreal, particularly those independently and packer-owned, were built to receive these size of cars. Unloading equipment and doors for wholesale units were based on spacing of such cars on rail sidings. Also, these cars were loaded with complete sides (instead of quarters) and there was sufficient space to enable them to be used as extra cooler space for customer carcass selection. In the late 1960's, the railways introduced larger capacity, mechanically cooled cars as a method of increasing rail efficiency of moving beef. As an incentive to have these cars used, the railways offered rates that were considerably lower than the rates for the 33,000 lb. cars.

Initially, the packers promoted the use of these cars for shipments to Montreal. The Montreal wholesalers, on the other hand, found these cars to be less advantageous for their use as their trade was set up for the smaller cars. Wholesalers voiced some concern that packers tended to add carcasses that were lower than the specified grade ordered as a method of making up a full load when specified carcasses were unavailable. Also, the beef was in quarters and was packed so tight that the cars were not usable for customer selection. The independent wholesalers, through their association, finally insisted that if these cars continued to be used, they wanted to share in the benefits of the savings the railways offered. If not, they would go back to accepting only the 33,000 lb. cars.

An informal agreement was reached between packers shipping into Montreal and the Independent Wholesalers and Packers Association of Montreal. It was agreed that these wholesalers would receive 75 percent of the savings occurring from the use of any size of cars larger than 33,000 lb. This agreement also affected the retail and packer-owned wholesalers.²⁰ As of

²⁰ This rebate is paid in the form of a direct payment from the packer to the wholesaler. The transportation company is not involved. The 33,000 lb. rate is the base and any benefits in lower freight rates through use of cars larger than the base, i.e. 40,000 lb., 50,000 lb., 60,000 lb., etc. are split 75-25 between wholesaler and packer.

August 1971, the rebate was 50.25 cents/cwt. for shipments from Alberta to Montreal in 60,000 lb. cars. With every increase in freight rates, this rebate increased for two reasons, First, if the freight rates are applied on a percentage basis, then the absolute difference logically increases. Secondly, for the smaller size 33,000 lb. cars the percent rate increases have been greater than for the large mechanical cars. By May 5, 1975, the freight rebate on 60,000 lb. cars from Alberta had reached \$1.39 $\frac{1}{2}$ /cwt. and further increases will occur with each new rate increase. Beef shipments by highway transport to Montreal are also subject to these rebates to remain competitive.

Most of the benefits of cost-saving transportation technology have not been passed to producers and retailers but instead have been absorbed by the wholesaling sector and used to offset increased costs of operating at the wholesale level.²¹ The wholesale sector has been unable or unwilling to pass on increased costs to the retail sector through an increase in the commission rate. To make up these costs, they have forced packers to pay a freight rebate. The rebate becomes a simple and automatic way of adjusting total wholesaling charges (rebates plus commission). Nevertheless, the traditional Montreal wholesaler system is further perpetuated by the retention of the gains from the introduction of this new technology. Again, the more efficient operations tend to subsidize the less efficient. In contrast, the benefits of the lower rates appear to be distributed between packers and retailers in Toronto. Retailer chains in Montreal have been able to take advantage of the rebate through wholesaling themselves, as have the packer branch houses.

In summary, structural constraints within the Montreal carcass market have allowed the Montreal wholesaler sector, including independents, branch houses and retailer to obtain a freight rebate from the Western packers and to charge a three cents per lb. commission on beef carcasses. This action appears to be detrimental to both consumers and producers. In other centres, more efficient distributional systems have been introduced with the benefits accruing to both producers and consumers, while in Montreal consumers must pay relatively high prices. As a result of the above constraints, the main beneficiaries in the Montreal carcass market have been the most efficient of the retail, independent and packer-owned wholesalers.

From the Commission's analysis, it appears that the structure of the wholesaling sector in Montreal, including independent, packer and retail-owned wholesalers is the main obstacle in improving the market performance. The nature of the market suggests that the share of the benefits derived by consumers from increased wholesaling efficiency should be larger than the share going to producers. Thus, the current arbitrary 75-25 percent split allocation of the freight rebate may not be much different even under competitive conditions. Also, distribution efficiencies introduced to the Montreal wholesale market could have an effect on the Canadian carcass market to the extent that the Montreal wholesale price effects regional carcass price competition.

²¹ Results of Research Report No. 7. Profit Margins of Firms Marketing Beef, show that wholesaler profits in total are not large but that individual profits are varied.

7. EFFECT OF STRUCTURE AND CONDUCT

Structural characteristics and the associated conduct of market participants in the beef marketing chain have an effect on the performance of that marketing system. A very important structural characteristic is the concentration of size of buyers and sellers. Commission analysis found that there are a small number of firms which dominate at the packer, wholesaler and retailer level.²² Indications were also found of a trend toward relative growth of concentration in each of these sectors. The degree of concentration results from both horizontal (increase in market share) and vertical (movement into other links of the marketing chain) integration. The following section describe the possible effects of concentration on the performance of the market.

Horizontal Integration

In any marketing chain where prices are established at one or several levels it is considered most important to the establishment of equitable prices that both buyers and sellers have equal negotiating power to establish that price. For instance, there is not equal negotiating power when a few large buyers purchase from a large number of sellers or vice versa. To ensure that a market will perform well neither buyer nor seller should be in a position to use its size to unduly influence price determination.

The current procedure used in the setting of beef carcass prices on the Montreal market represents a bargaining sequence between wholesalers and packers. At the wholesale to retail level, the wholesalers, as represented by the branch houses, independents and retail wholesalers, negotiate with the individual retail firms. In this case, retailers, probably have a slight advantage due to their concentrated buying power for several high beef volume outlets. At the packer to wholesaler level, however, it would appear that buyers and sellers are of equal size. The major packers ship the majority of beef into Montreal and a few large wholesalers, including retail-wholesalers, purchase the beef.

At present, it would seem that the relative concentrated power of packers, wholesalers and retailers seems to be approximately equal. If current trends continue, however, then the overall concentration of market share by retailers will increase relative to that of the packers, thereby improving the formers bargaining position vis à vis packers.

²² Commission of Inquiry into the Marketing of Beef, Research Report No. 1, Organization and Method of Operation of the Cattle and Beef Marketing System in Canada (Ottawa: Information Canada, February, 1976)

Retail grocers have been increasing their concentration over the last years while on the other hand, the concentration of the major packers has been declining.²³ A particular example of this is in the Alberta market where there are numerous new packing plants, perhaps even to the position of there being excess capacity, while the retail sector is dominated by Safeway's in Alberta, so much so that they have been ordered to refrain from increasing retail sales floor space.

Increased retailer concentration over time could produce one of two general outcomes. It may mean that if retailers are successful in bargaining prices lower, perhaps to the detriment of producers, the savings will be passed on to the consumer. This will occur if the retail sector remains competitive. On the other hand, it is conceivable that retailers may absorb any benefits of their negotiative power, such as lower beef costs, to increase their own margins.²⁴ For beef producers, the increased power of the retailer may not auger well for their increased returns as shown in the previous section.

Along with the power to negotiate price will go the power to discriminate against various classes of types of cattle. For instance, there may be the continuation of the use of only steer beef to the detriment of the heifer and virgin bull beef and the provision of only certain types of beef to the consumer while other beef is totally ignored, i.e. grain fed versus grass fed. Retailers will be in a position to formulate their impression of consumer demands.

Vertical Integration

In a marketing system it is expected that at each level within that system there will be a price-setting mechanism visibly displayed, and that all interested buyers and sellers may participate. For instance, in the beef carcass market, there would be a price between packers and wholesalers and wholesalers and retailers. At any of these levels all buyers would be able to bid for the beef that is available and all sellers could offer.

Vertical integration by either packers moving forward into the marketing chain towards the consumer, or retailers moving backward towards the producer, leads to a streamlining of the marketing system. The danger of such full-scale integration within the marketing chain is that it could lead to the disappearance of a usable forum for price determination at the various levels. The potential ultimate result is for a pricing system to

²³ Ibid, Table 29, the percentage of cattle gradings by major packers was 61.0 percent in 1960; 52.8 percent in 1970 and 59.3 percent in 1974. Statistics Canada, Voluntary Group Stores, states that corporate chain store sales accounted for 46.6 percent and 54.6 percent respectively in 1965 and 1972 of total grocer sales.

²⁴ Commission research on price margins found considerably higher margins for beef in markets where retail concentration was highest.

evolve that relies on direct negotiation carried out between the packers and the retail grocers with no access by other wholesale buyers, particularly purveyors. In effect, the price determination system disappears and is replaced by a system dependent upon confrontation by large buying and selling organizations.

In the beef marketing chain, vertical integration is occurring at the wholesaler level.²⁵ Packing plants are becoming more involved in wholesaling to the retailer, through both grocers and the HRI trade, and the use of the facilities of the individual packing plants or the packer branch house. At the other end of the chain, retailers are becoming more involved in the wholesaler sector, through the operation of central warehouses and/or central processing establishments. These developments are eroding the base of the wholesale carcass market, the major indicator of price between packer and producer and between wholesale and retail. Retail chains are dealing directly with packing plants so that there is no middleman involved between the packer and the retail firm. For retailers with wholesale operations, there is no real price negotiated at the wholesale level and "paper" wholesale prices result from corporate decisions rather than market decisions and are applied at the will of the retail firm. For example, in the Montreal market, the value attributed by the retail chains in moving their carcasses from wholesale to retail is based upon the 3 cents charge levied by independent and packer wholesalers rather than their real costs of wholesaling.

As vertical integration evolves, less and less beef moves through the visible market used in establishing the wholesale price, i.e. a thin market occurs. For example, in Montreal, traditionally brokers and independent wholesalers have been negotiating with packers to establish the weekly Montreal price. They are still establishing this price but the amount of beef traded by these market participants is decreasing and thus the amount of beef used for price establishment is less.²⁶ If the movement to complete vertical integration at wholesale continues, there will be the demise of many of independent brokers and wholesalers and, more importantly, the demise of the only visible, if somewhat blurred, price-setting mechanism for carcass beef.

²⁵ Ibid.

²⁶ Ibid. Table 46, independent wholesaler receipts represented 60.2 percent in 1971 and 53.2 percent in 1974. Independents include large cow boner's receipts while retail wholesale receipts are quality beef receipts.

A second important implication as the market becomes more streamlined is that carcasses and cuts moving between packers and retailers are not freely accessible to the purveying industry. The packers lock in the beef for use in their own company and retailers control the cuts available to their own stores leaving only the unneeded residual for sale to the purveying trade with both sellers in retailing powerful position. If there was a visible price-setting mechanism at each level in the marketing chain, including wholesale cuts, then each could bid for individual carcasses or cuts so that beef would move to those willing to pay the highest price. Such action should be of benefit to the producer.

There are, however, positive contributions stemming from vertical integration. It could be an effective method of introducing efficiencies into the marketing system. The establishment of markets at each level in a marketing chain, while maintaining a price-setting forum, add to marketing costs. The reduction in the number of transactions between the producer and the ultimate consumer often can reduce overall costs. However, these efficiencies must be passed on through the system which only occur if other sectors are competitive or regulated.

8. SUMMARY

The analytical study of the above equity and efficiency performance criteria has shown that the Canadian beef carcass market did not perform well during the period studied. Price equity, the situation of all buyers paying the same base price for the same product, was rarely achieved in the three situations studied. First, the relative prices of beef, taking into account transportation costs, were not equal in all eight regional markets in Canada. Prices in the Prairie markets were often relatively higher than the Montreal market particularly for A3 and A4 steer carcasses. Prices of A grade heifer carcasses varied greatly between regions, ranging from being relatively lower prices to relatively higher priced in the Prairie markets compared to the Eastern Canadian markets. Only A2 steer carcass prices approached the expected relative levels among markets.

Secondly, equity of prices between market levels i.e. the substitutability of live cattle and carcass in consumption areas, was possible only between the A1,2 live steer markets in Calgary and Winnipeg and the A1, A2 steer carcass market in Southern Ontario. The remaining cases studied showed that prices were not equivalent between A grade live cattle and carcasses and therefore, equal substitution was not possible. Thirdly, the analysis showed that there was not equity of prices among the various types of A grade carcasses according to the scientifically determined retail yield of each carcass type. All categories of A grade heifer carcasses and A3 and A4 steer carcasses appeared to be unjustifiably discounted by the trade.

The study showed that the carcass price setting mechanism in Montreal is not particularly efficient. It does not appear to be adequately reflecting changes in supplies and demands and may remain out of equilibrium for considerable periods. Such pricing behaviour necessitates large adjustments for eventual corrections. The wholesaling sector, particularly in Montreal, was found to be using a very inefficient means of distributing beef to retail, affecting both producers and consumers. Also, the benefits of the introduction of larger, less costly freightcars was found to be largely absorbed rather than redistributed, especially to retailers and potentially to Montreal consumers. The main beneficiaries of this technological change appear to be the most efficient of the Montreal retail, independent and packer owned wholesalers.

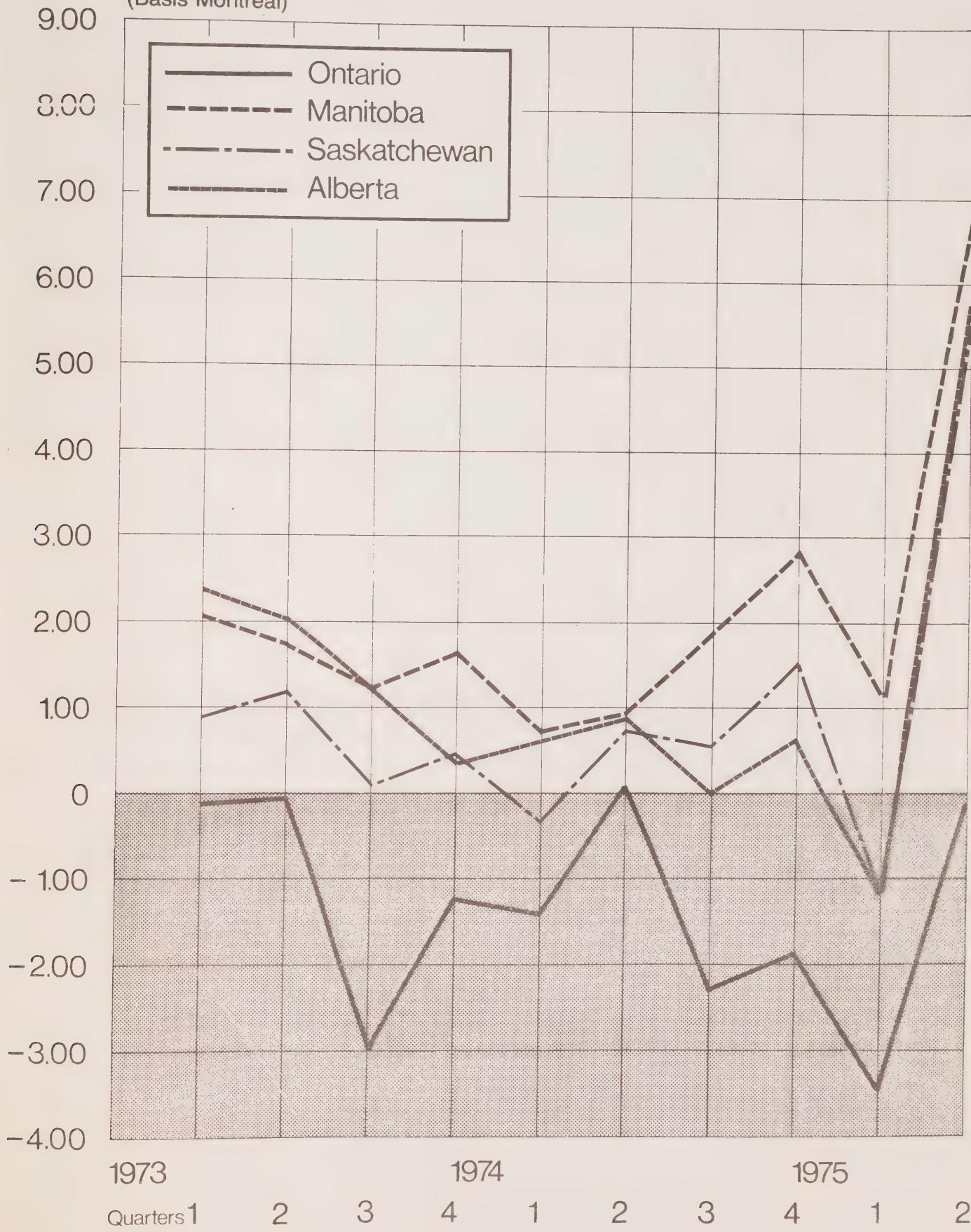
The analysis also suggest that continued retailer market concentration could have a detrimental effect on the price setting mechanism by increasing the retailers bargaining power relative to the wholesalers and packers. This combined with the trend to further retailer involvement in wholesaling could lead to the disappearance of the only visible form of wholesale beef pricing currently operating the Montreal carcass market.

GRAPH 1

REGIONAL CARCASS PRICE DIFFERENCES, A1 STEERS

January 1973 – June 1975

(Basis Montreal)

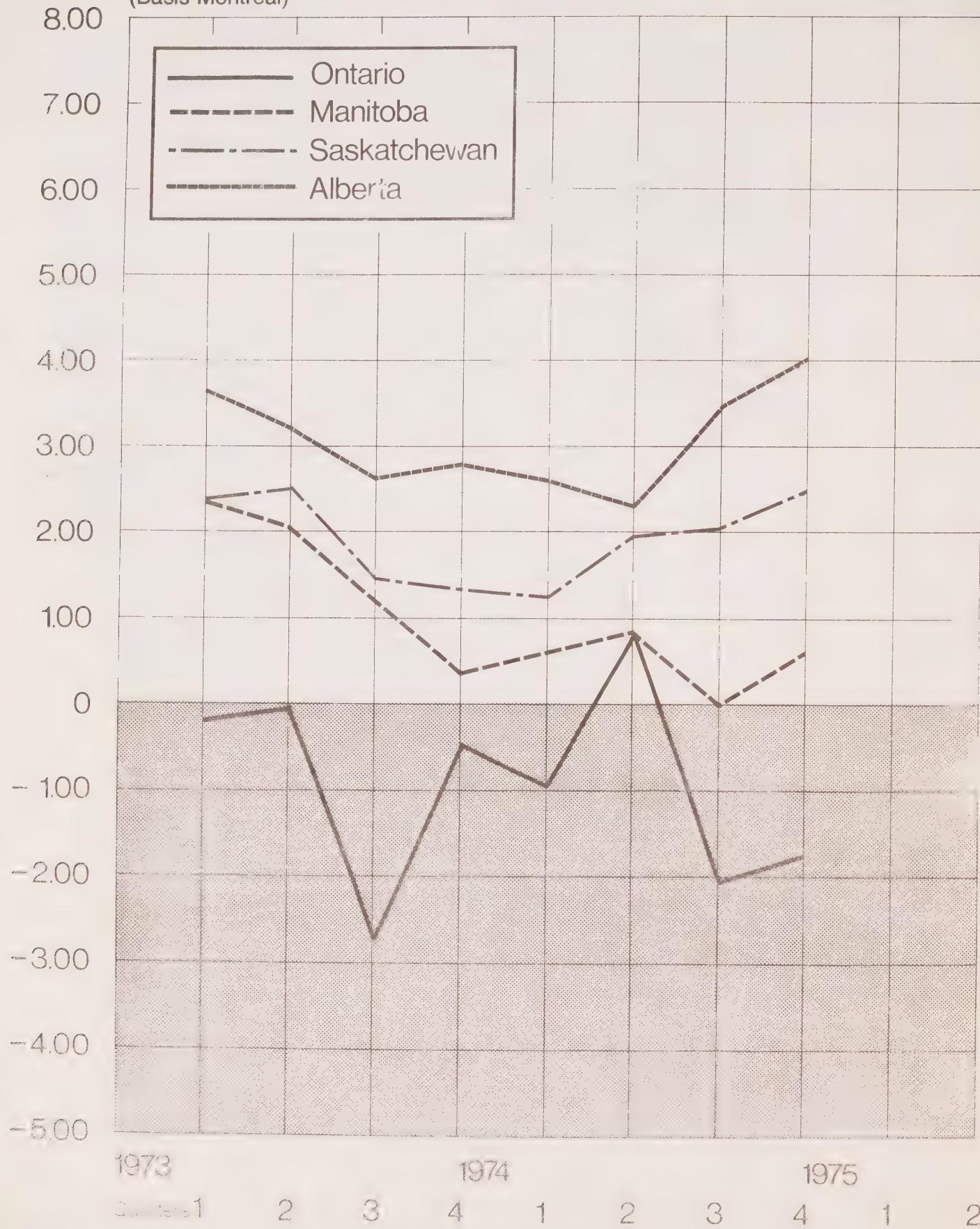


GRAPH 2

REGIONAL CARCASS PRICE DIFFERENCES, A2 STEERS

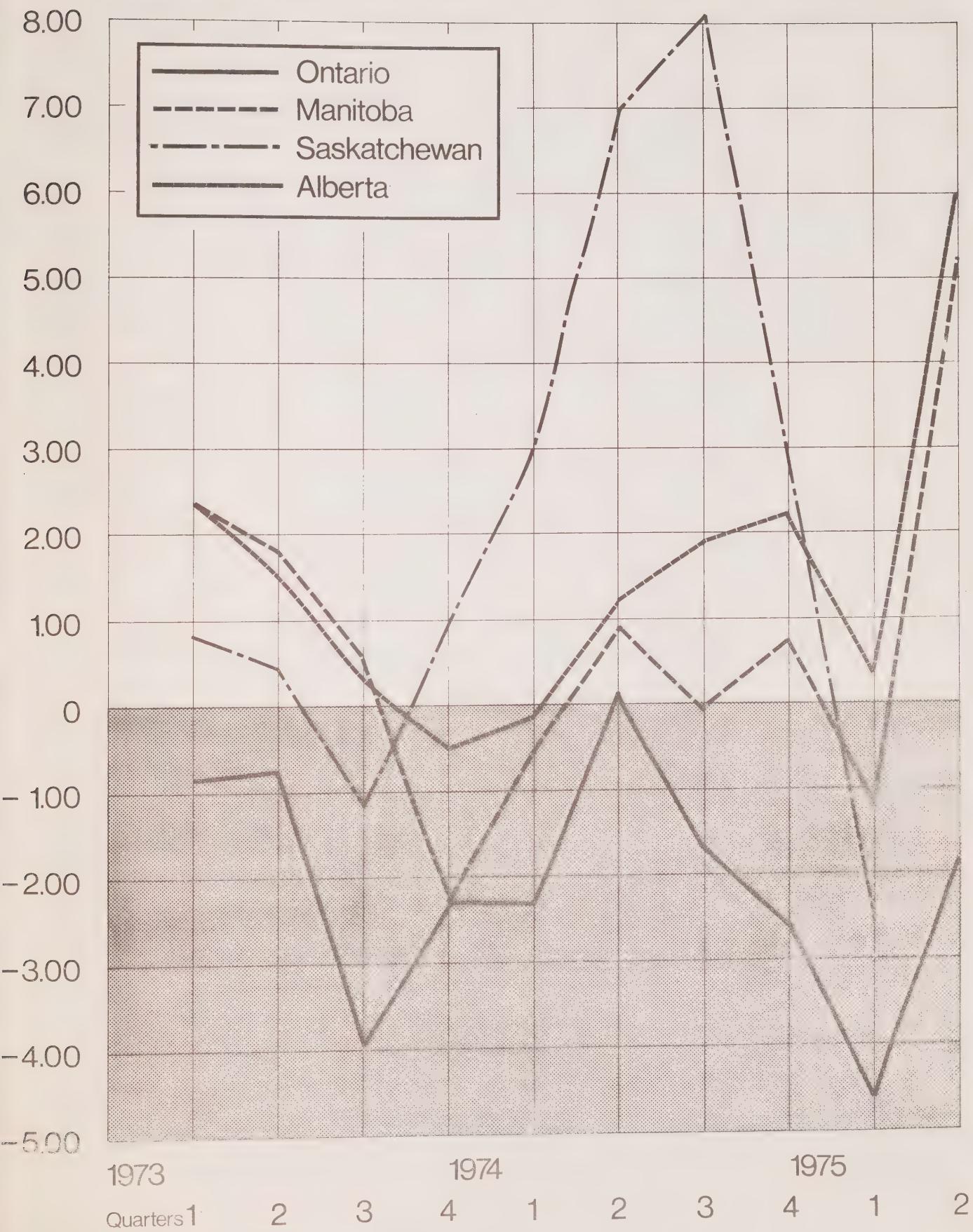
January 1973 – December 1974

(Basis Montreal)



GRAPH 3

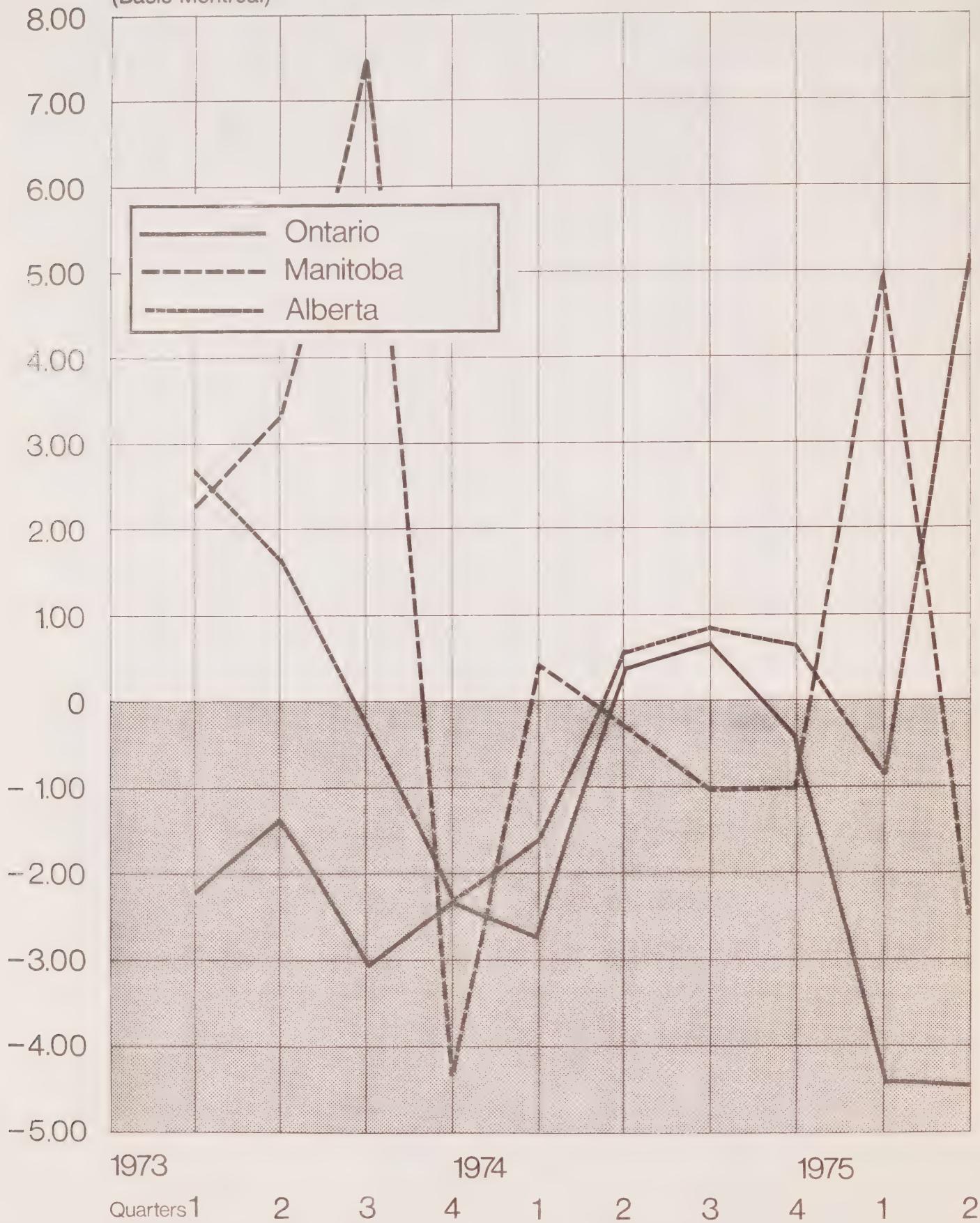
REGIONAL CARCASS PRICE DIFFERENCES, A3 STEERS January 1973 – June 1975



GRAPH 4

REGIONAL CARCASS PRICE DIFFERENCES, A4 STEERS
January 1973 – June 1975

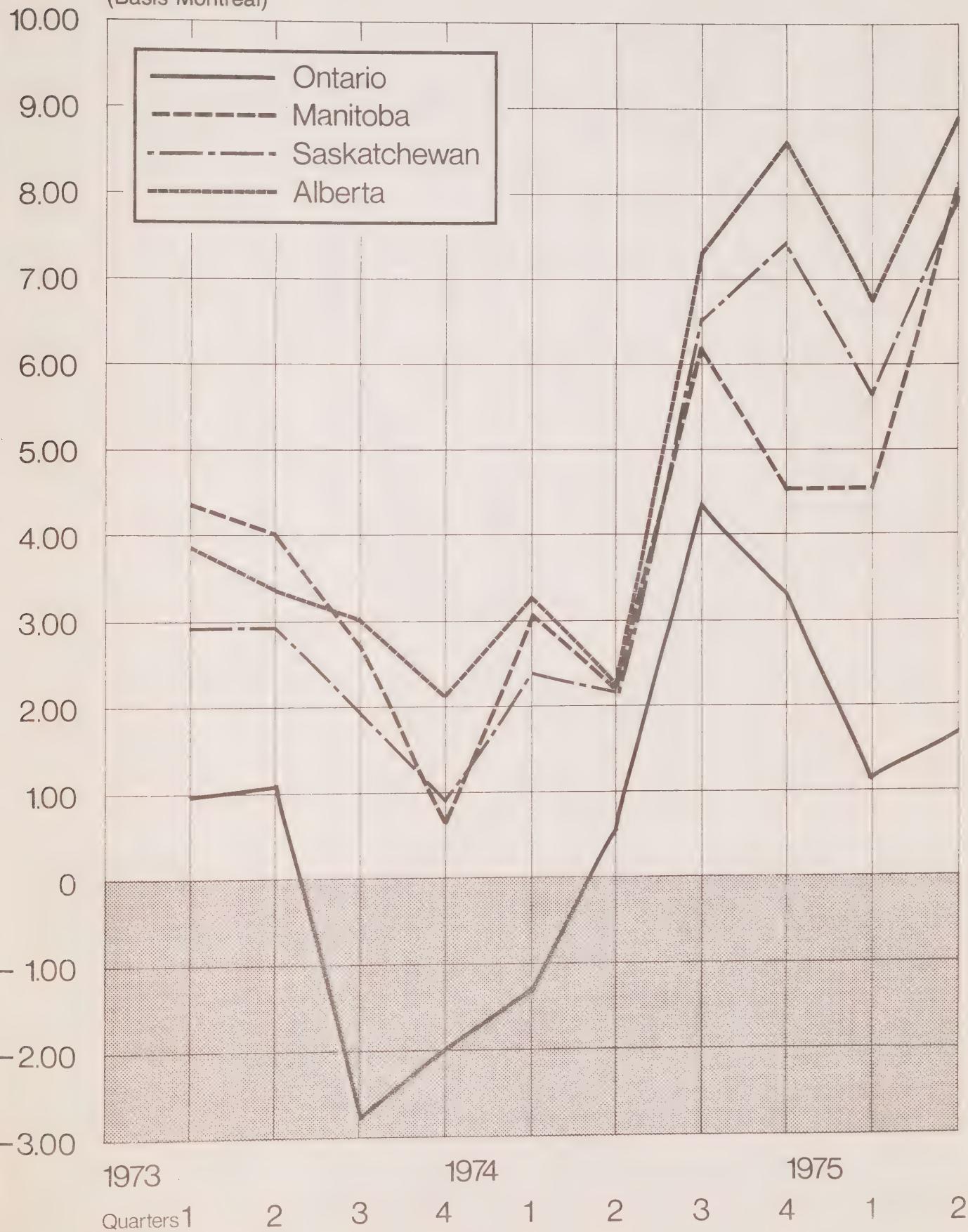
(Basis Montreal)



REGIONAL CARCASS PRICE DIFFERENCES, A1 HEIFERS

January 1973 – June 1975

(Basis Montreal)

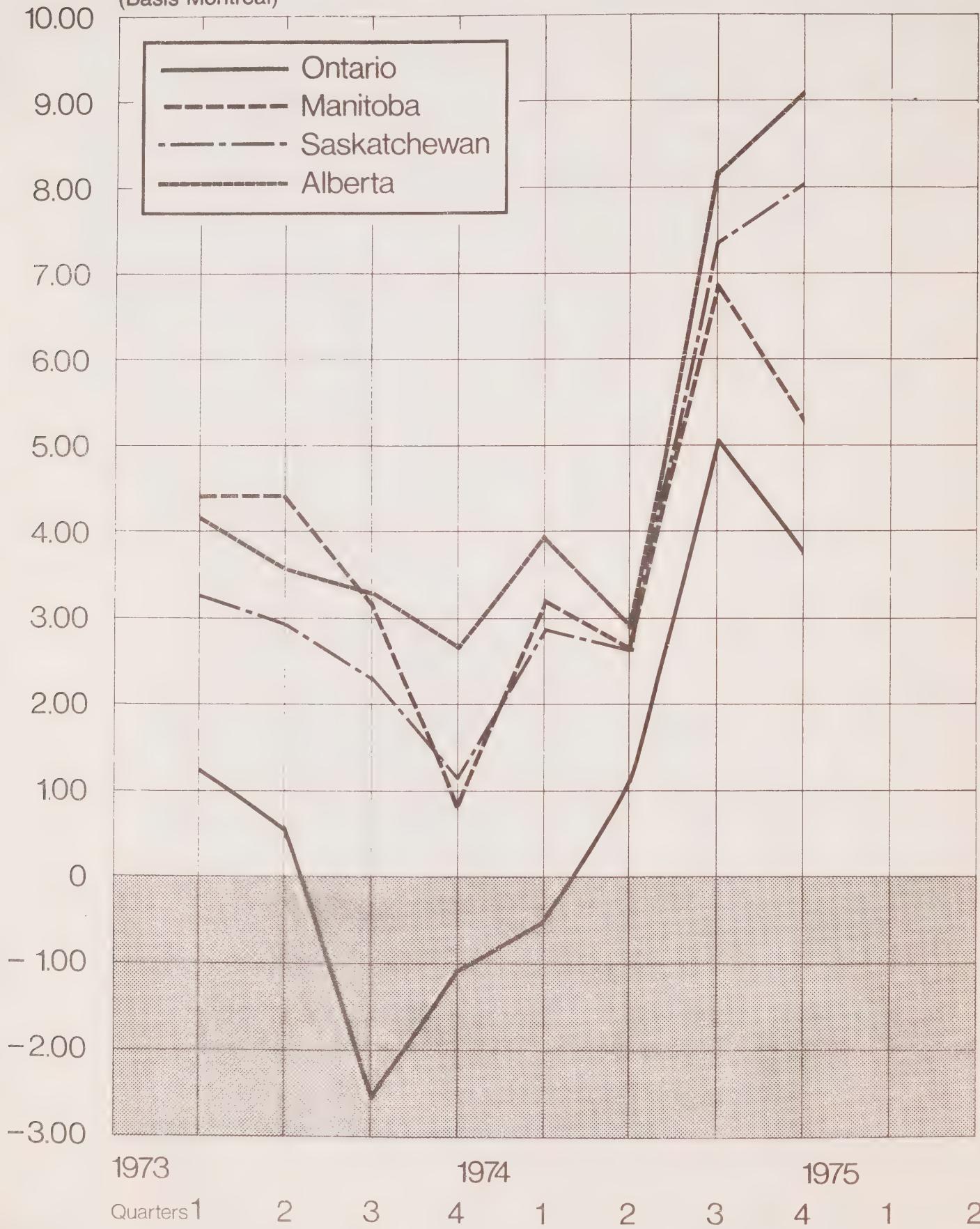


GRAPH 6

REGIONAL CARCASS PRICE DIFFERENCES, A2 HEIFERS

January 1973 – June 1975

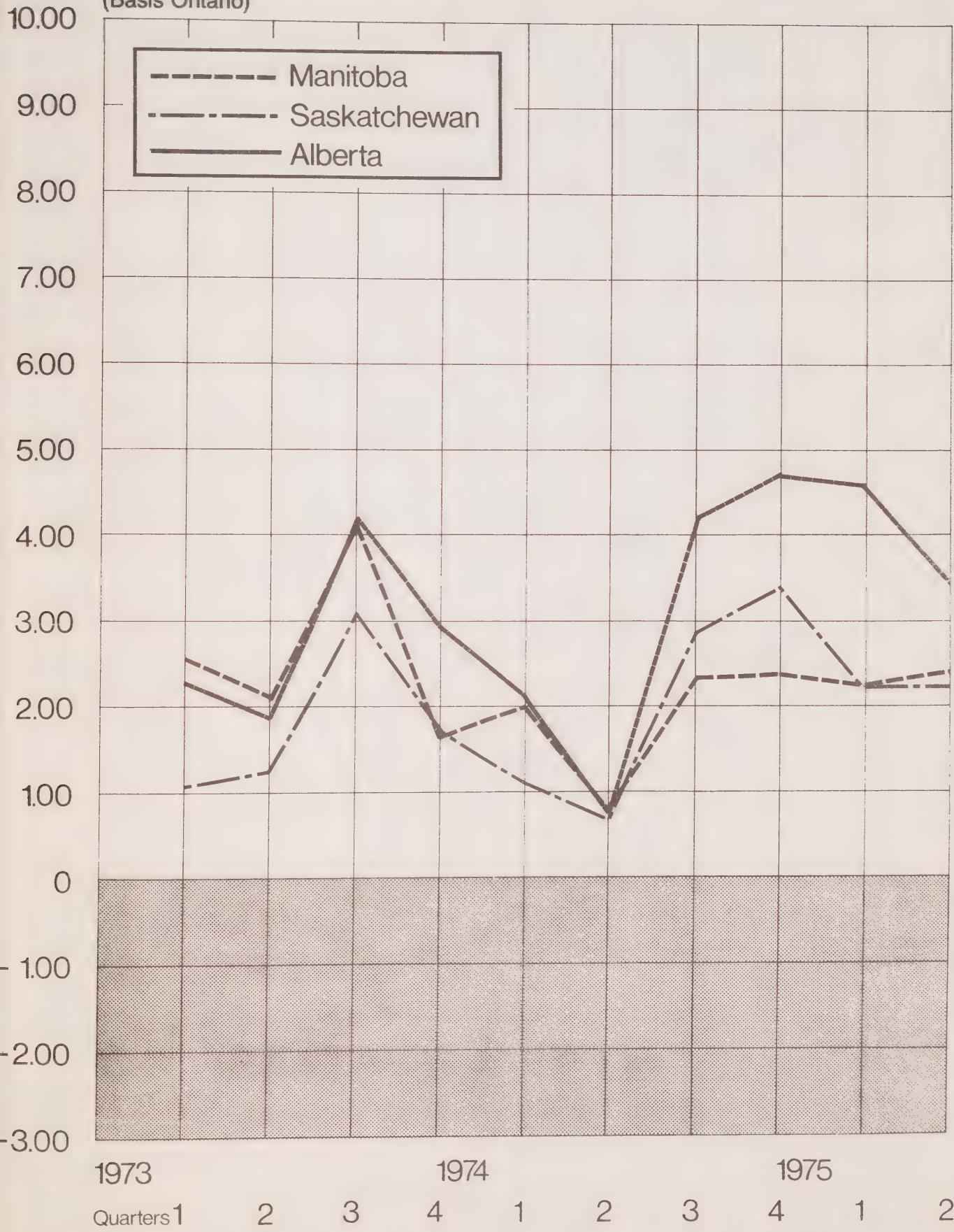
(Basis Montreal)



REGIONAL CARCASS PRICE DIFFERENCES, A1 STEERS

January 1973 – June 1975

(Basis Ontario)



GRAPHIC

REGIONAL CARCASS PRICE DIFFERENCES, A2 STEERS

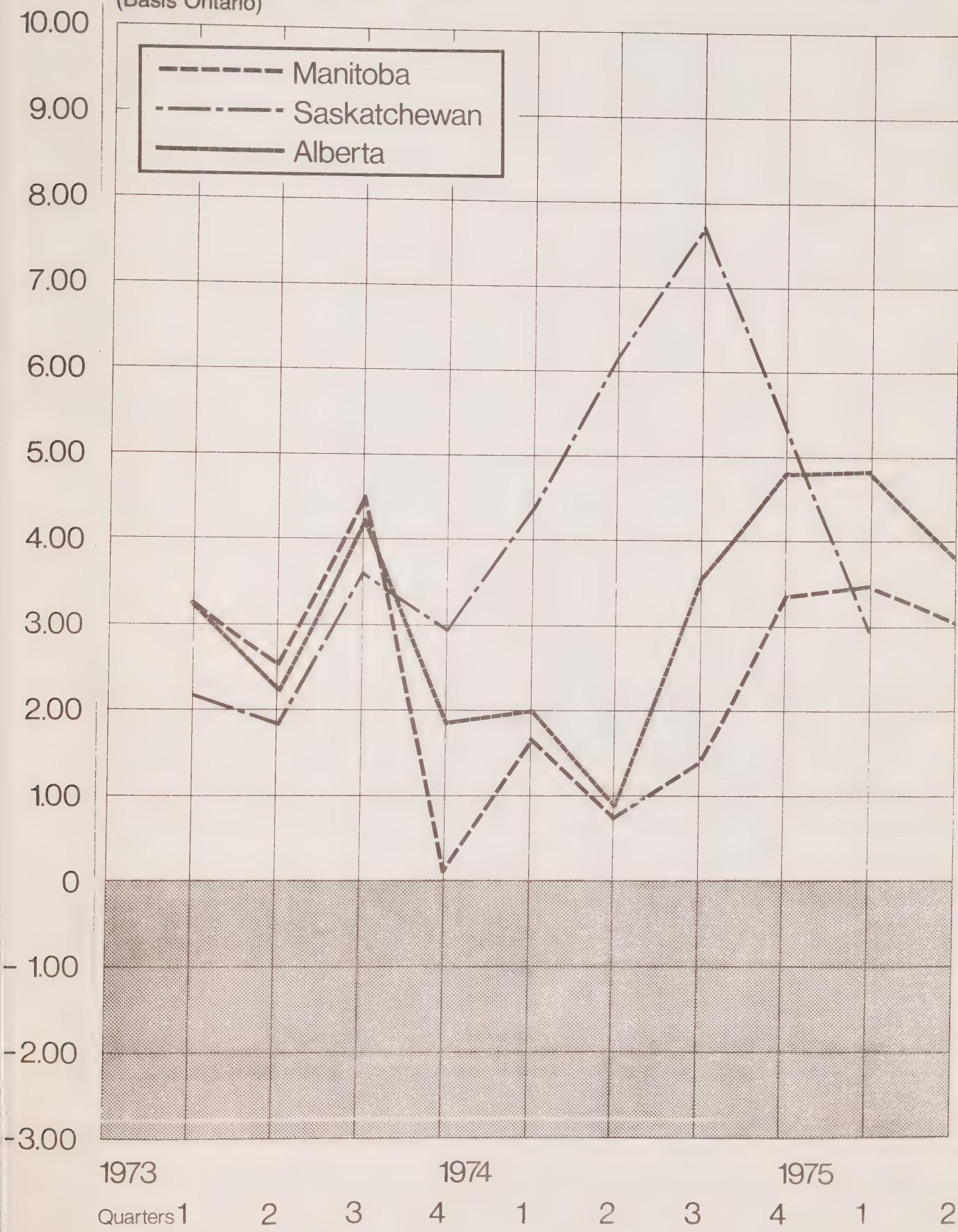
January 1973 – June 1975

(Basis Ontario)



GRAPH 9

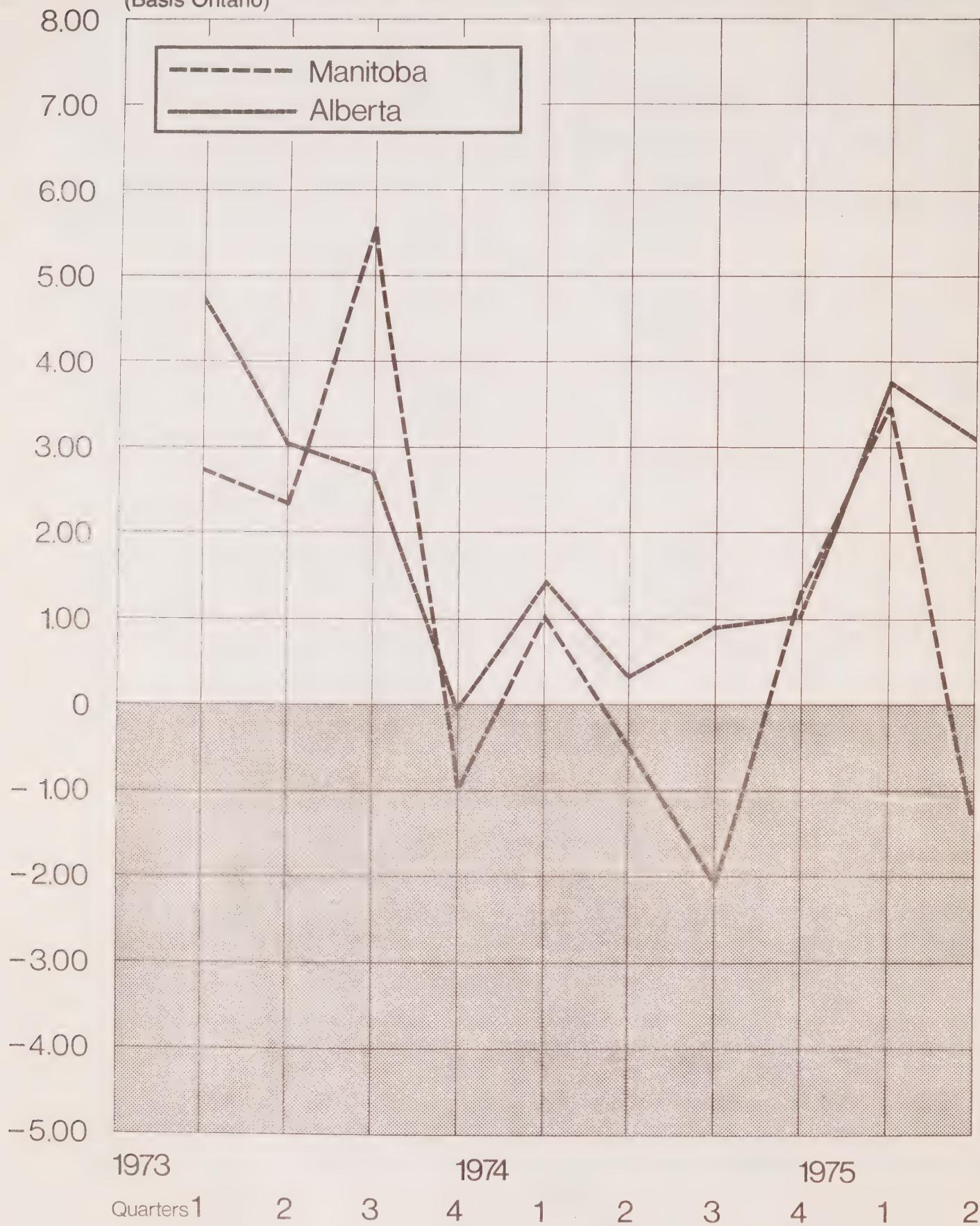
REGIONAL CARCASS PRICE DIFFERENCES, A3 STEERS
January 1973 – June 1975
(Basis Ontario)



GRAPH 10

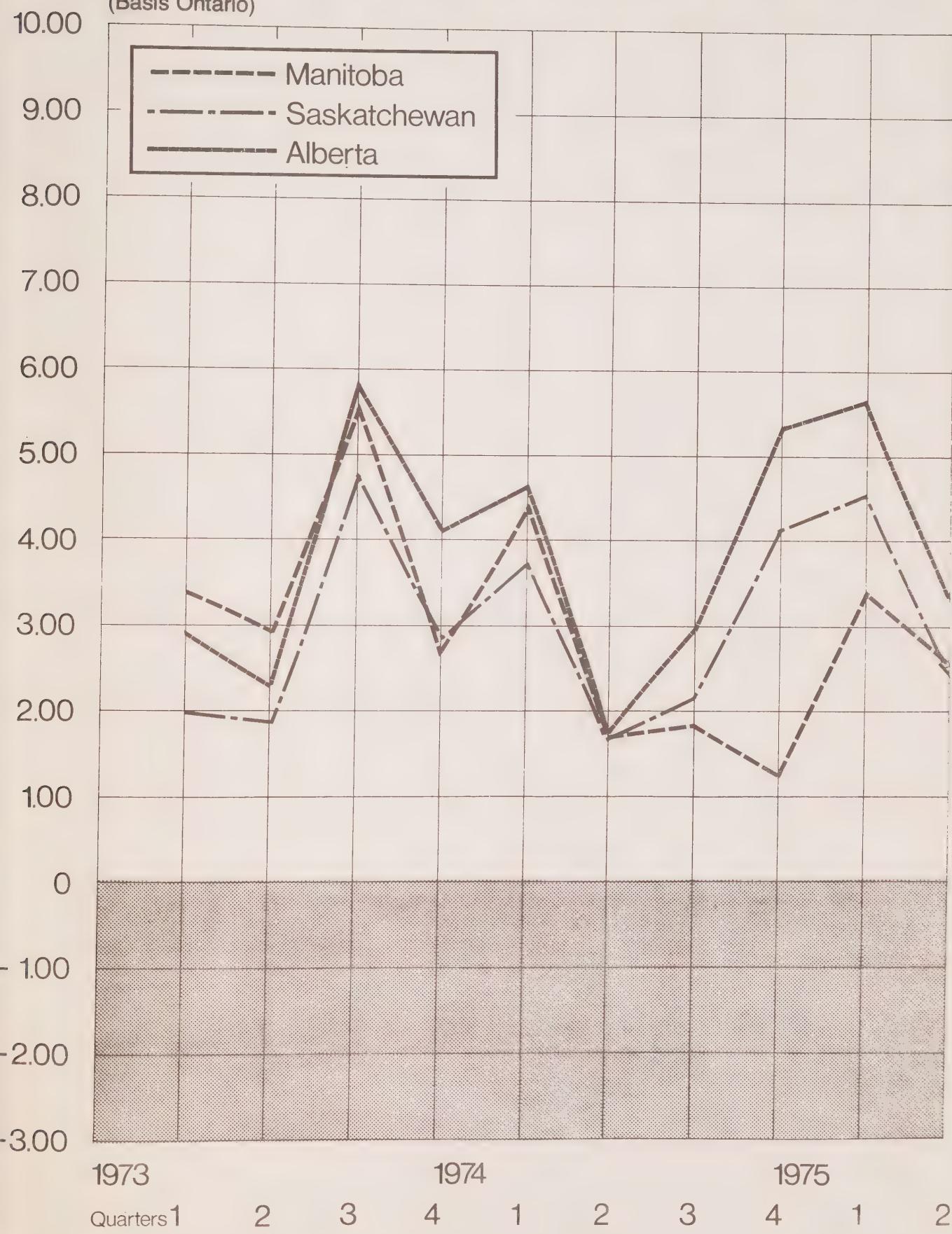
REGIONAL CARCASS PRICE DIFFERENCES, A4 STEERS**January 1973 – June 1975**

(Basis Ontario)



GRAPH 11

REGIONAL CARCASS PRICE DIFFERENCES, A1 HEIFERS
January 1973 – June 1975
(Basis Ontario)

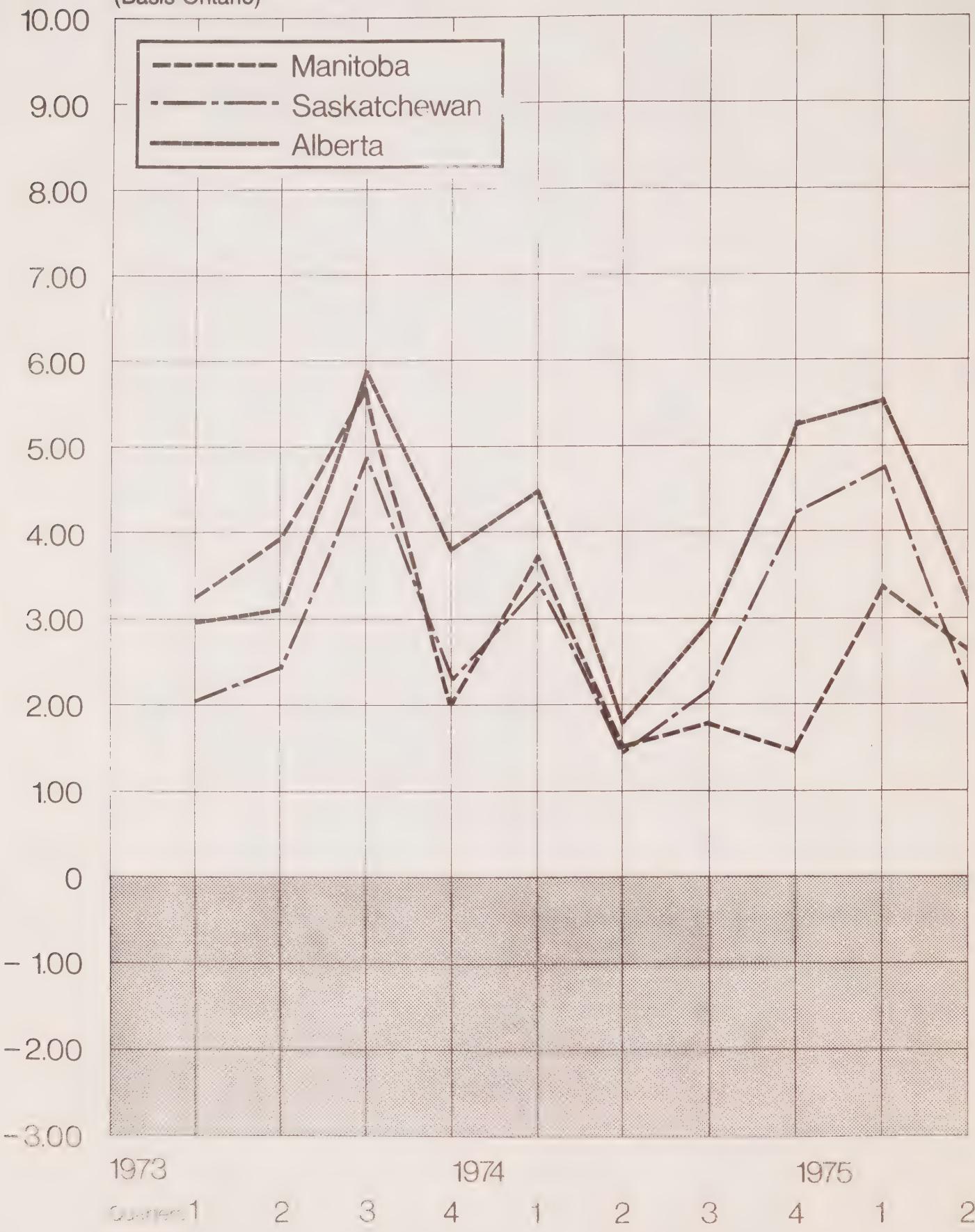


GRAPH 12

REGIONAL CARCASS PRICE DIFFERENCES, A2 HEIFERS

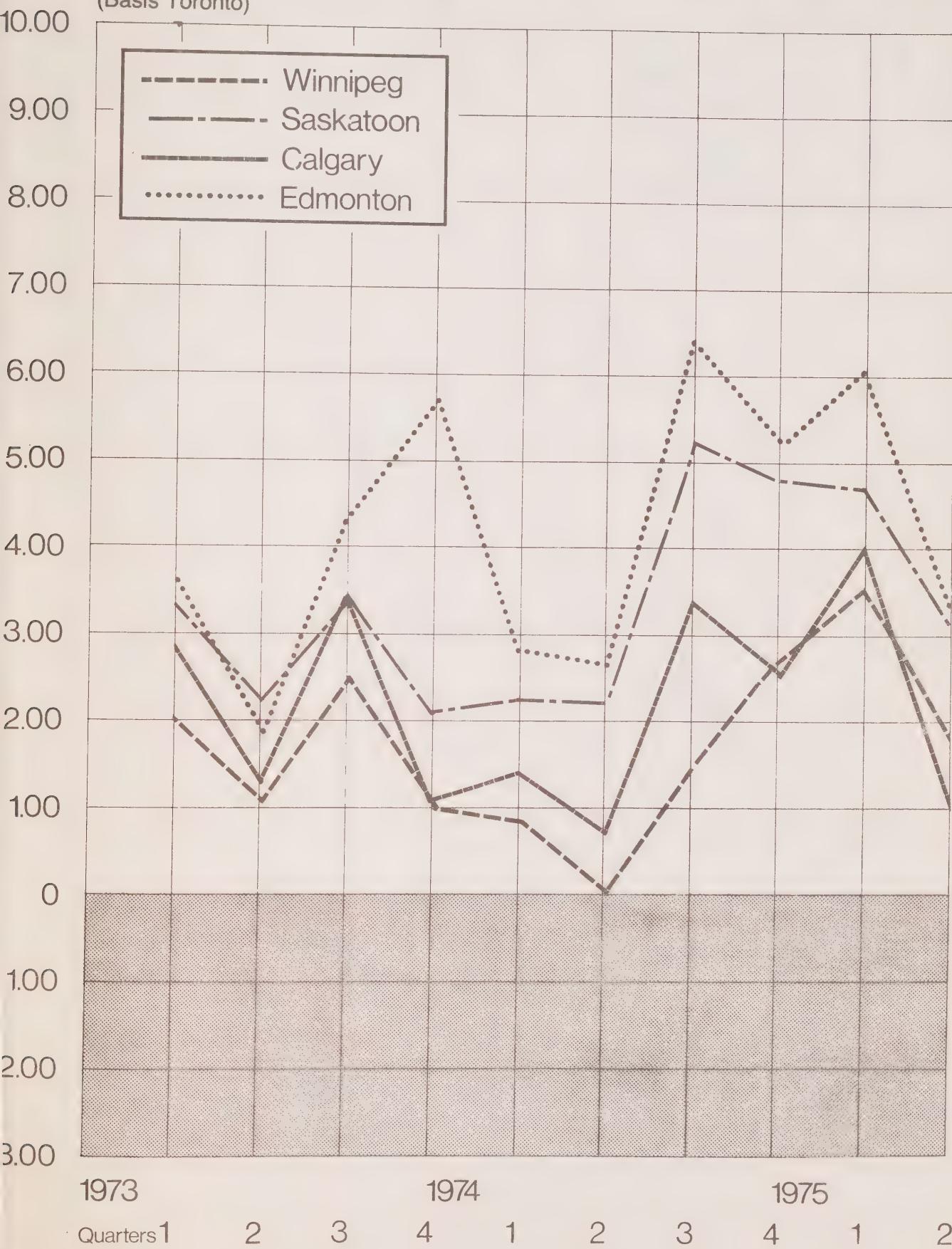
January 1973 – June 1975

(Basis Ontario)



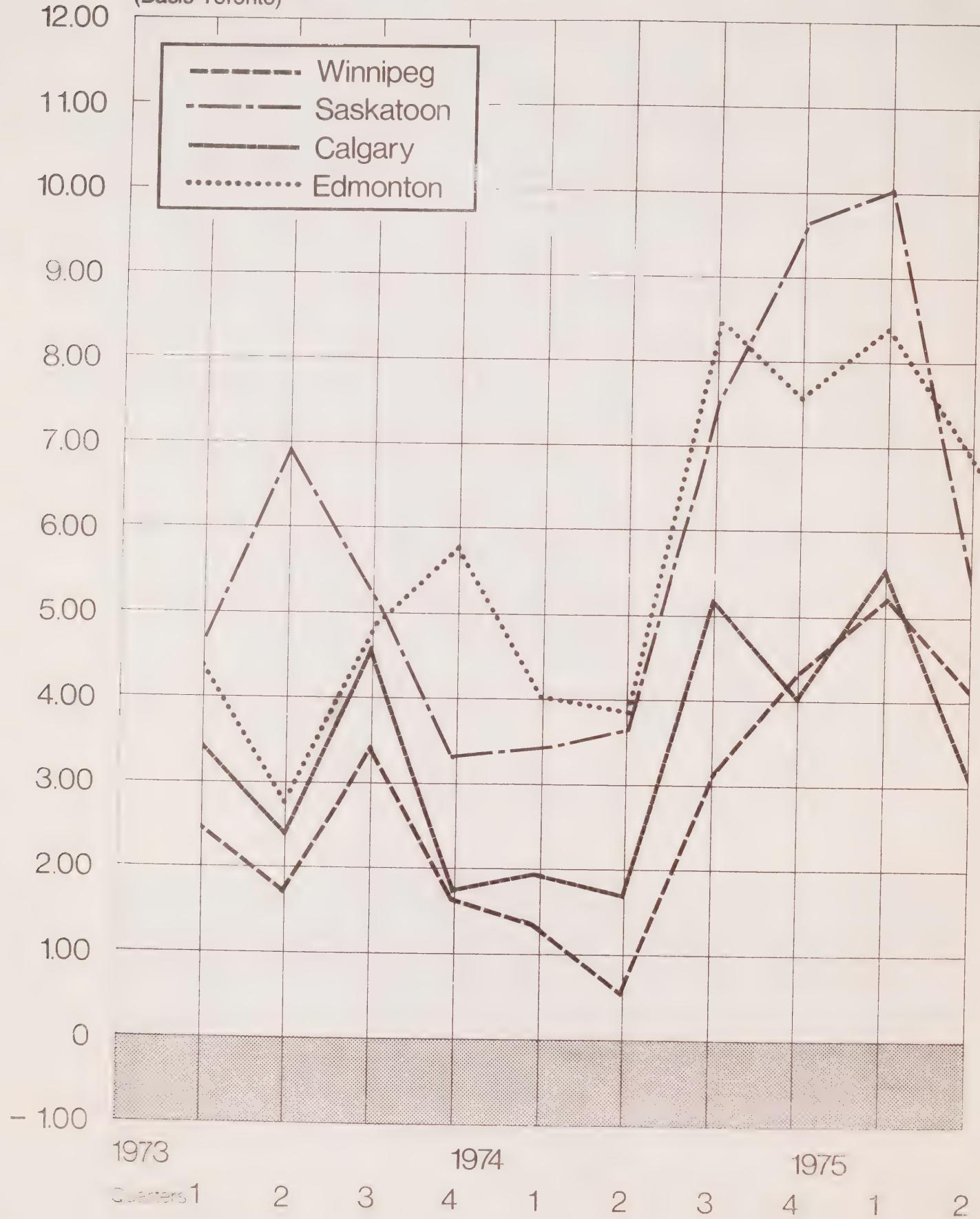
REGIONAL LIVE CATTLE PRICE DIFFERENCES, A1, A2 STEERS
January 1973 – June 1975

(Basis Toronto)



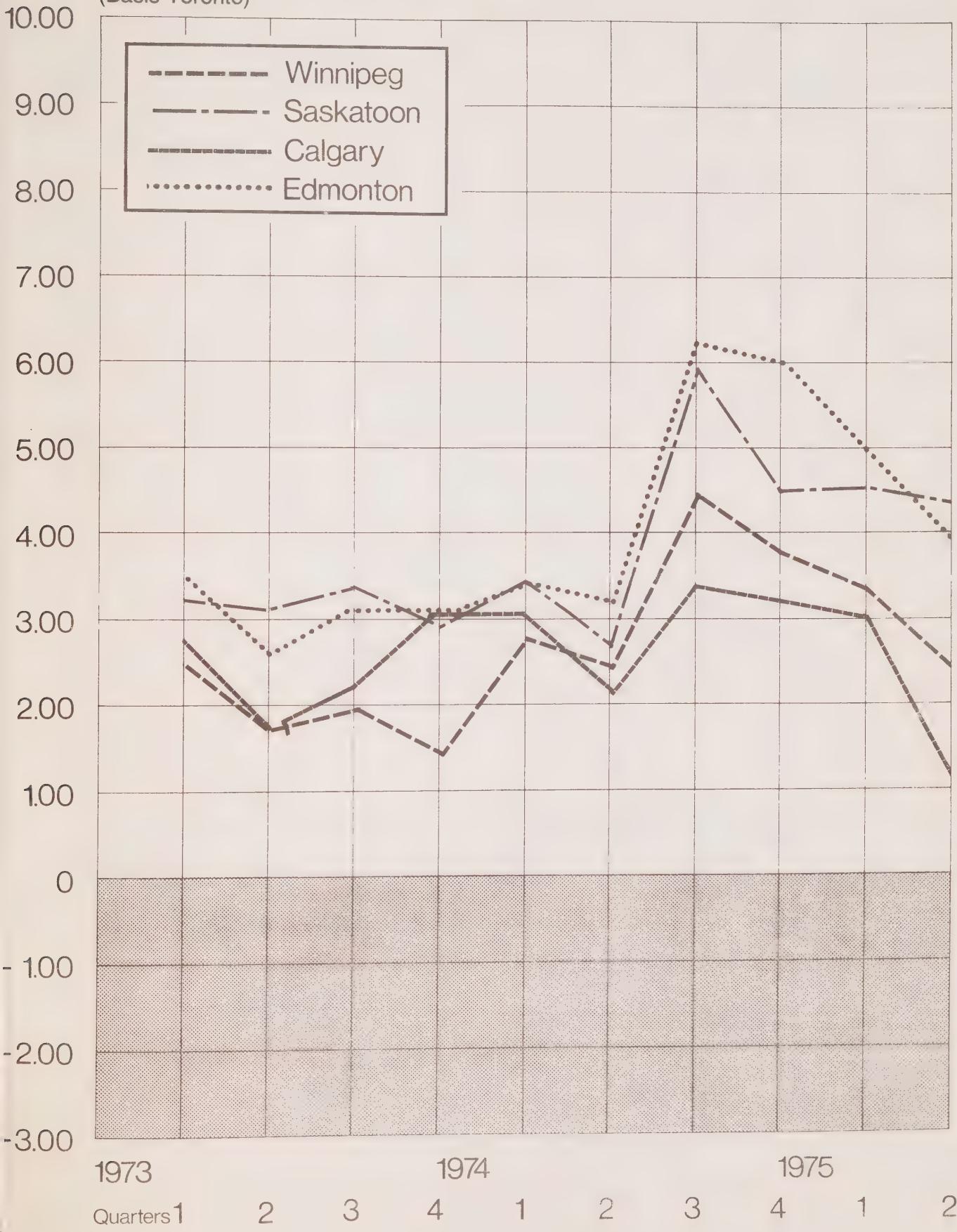
GRAPH 14

REGIONAL LIVE CATTLE PRICE DIFFERENCES, A3 STEERS
January 1973 – June 1975
(Basis Toronto)

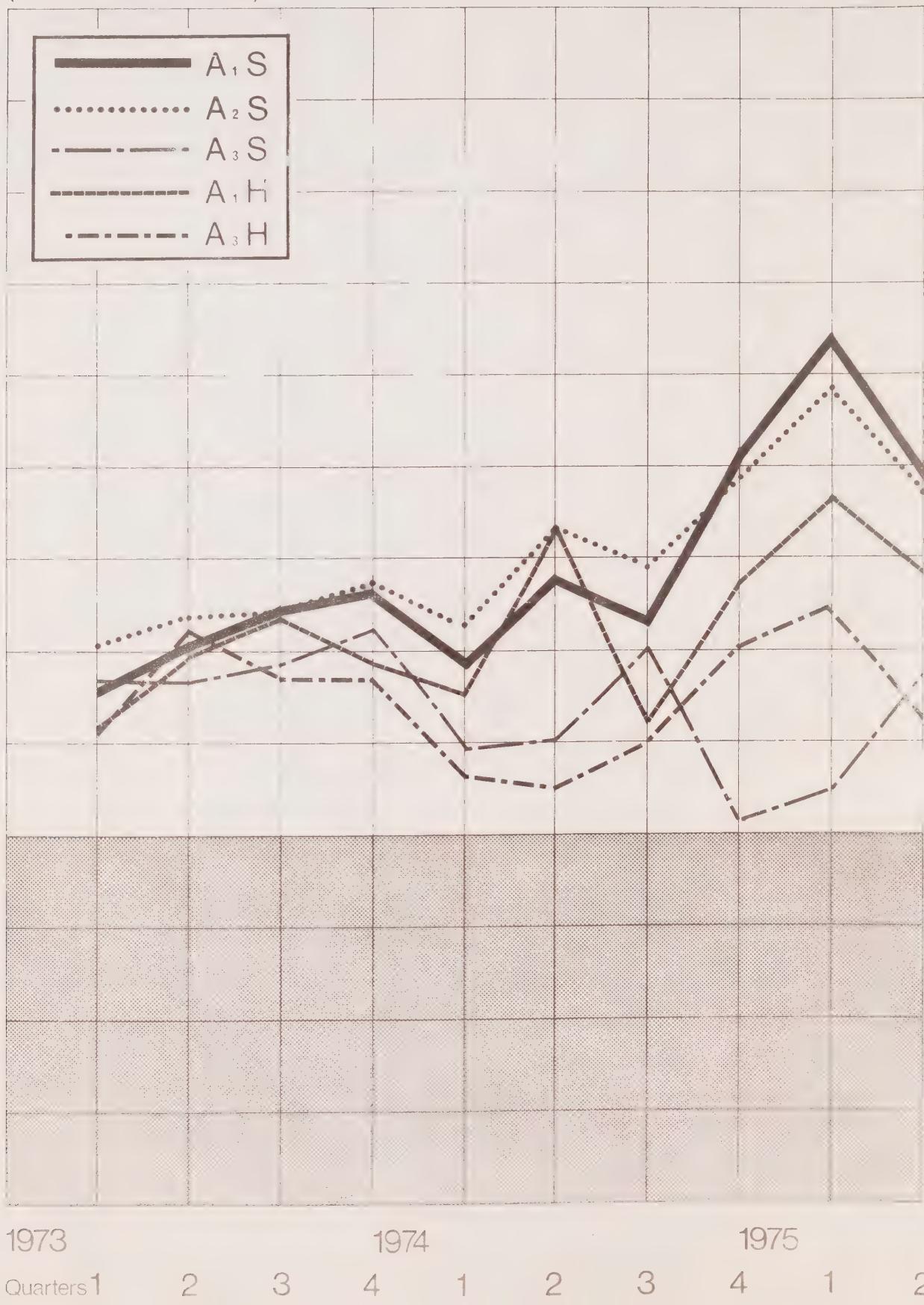


GRAPH 15

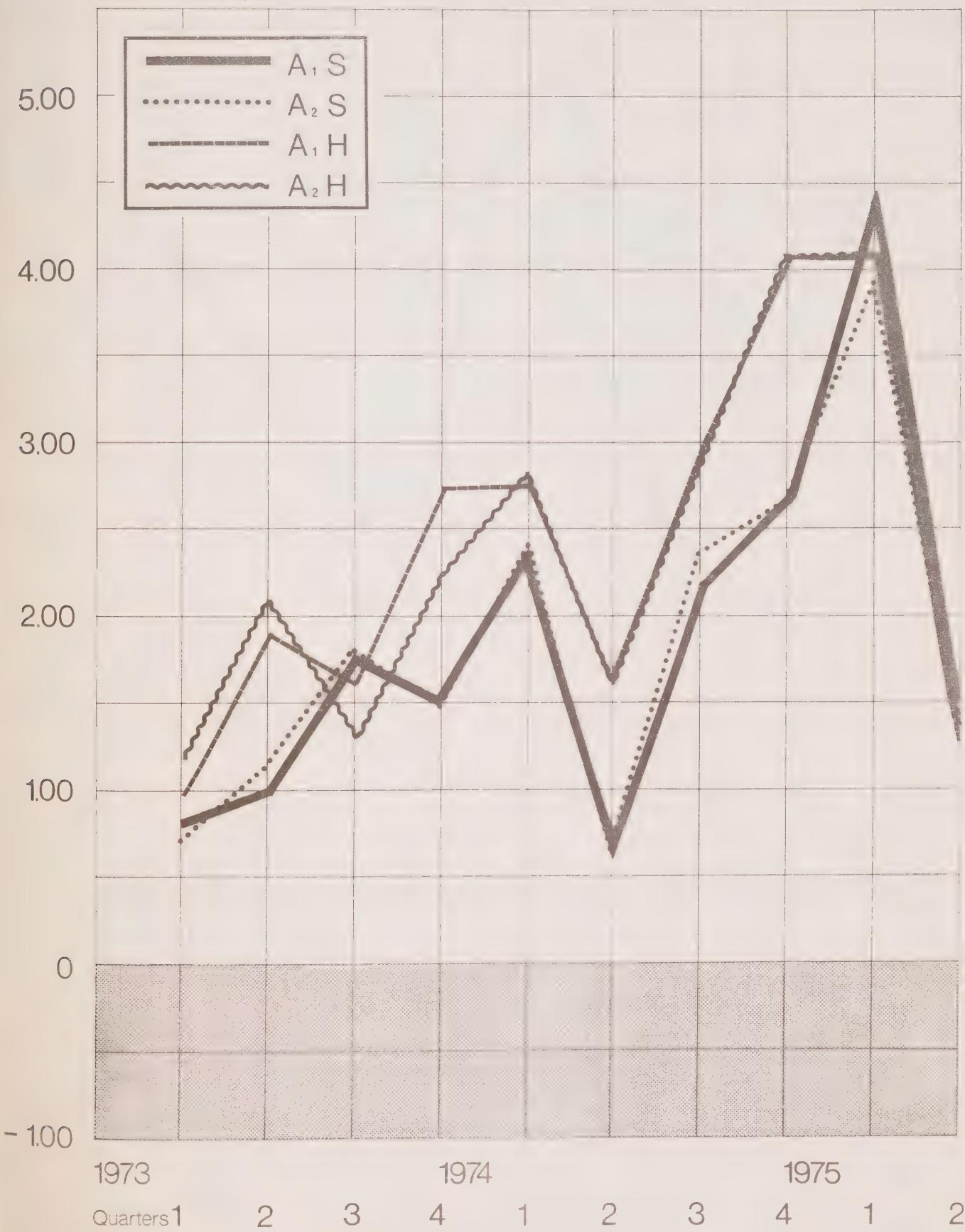
REGIONAL LIVE CATTLE PRICE DIFFERENCES, A1, A2 HEIFERS
January 1973 – June 1975
(Basis Toronto)

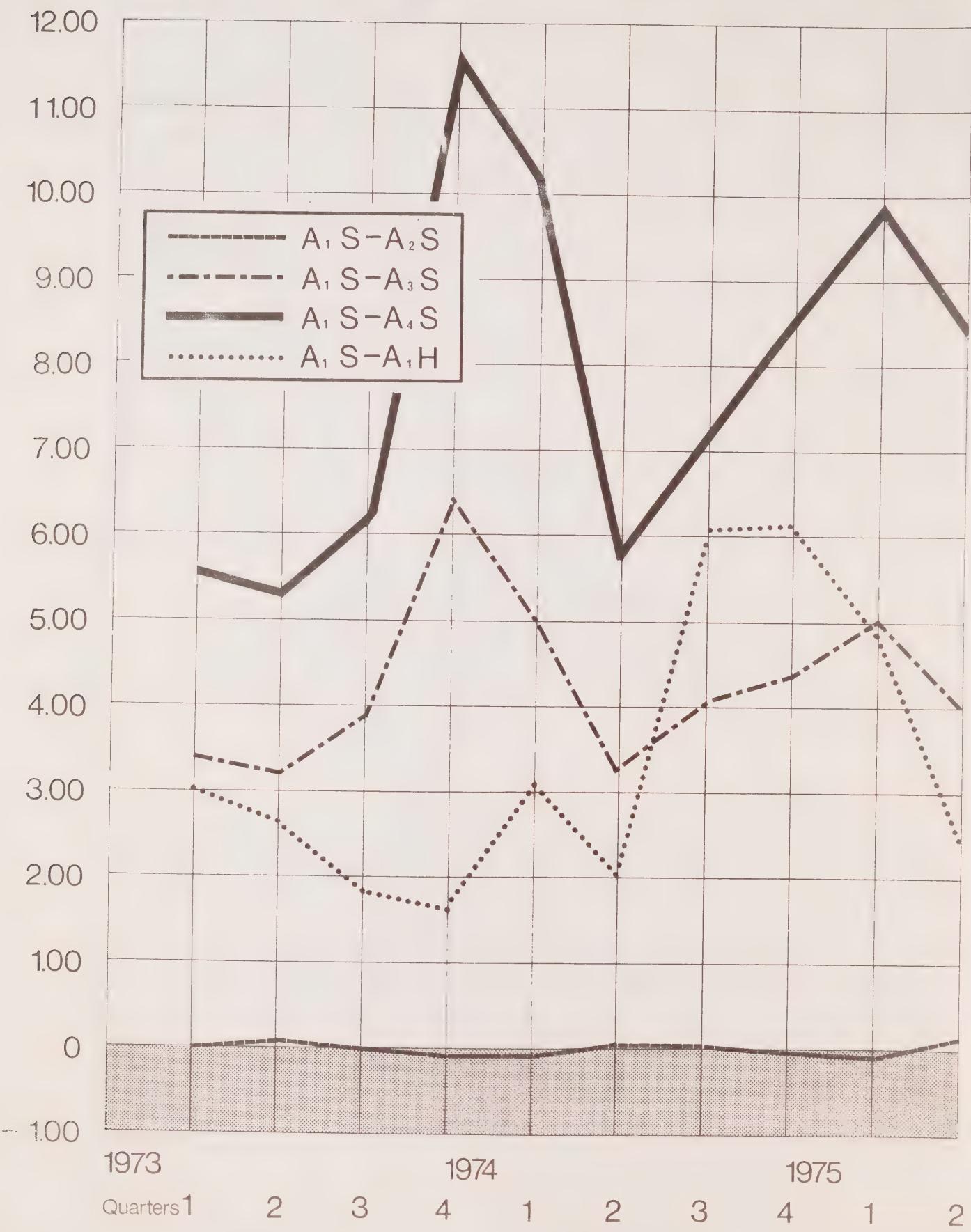


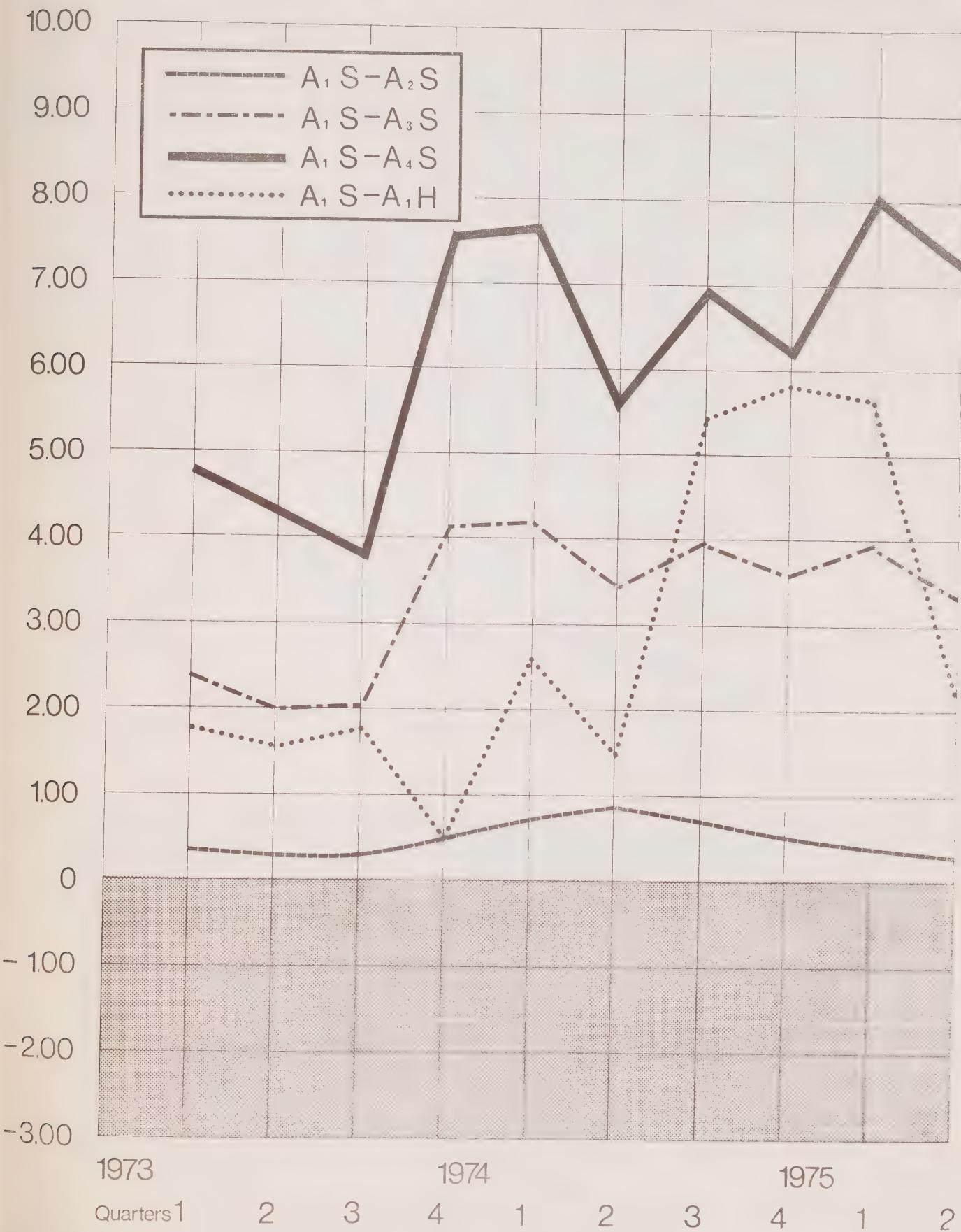
**BRITISH COLUMBIA AND ALBERTA PRICE DIFFERENCES
FOR A GRADE CARCASSES**
January 1973 – June 1975
(Basis British Columbia)



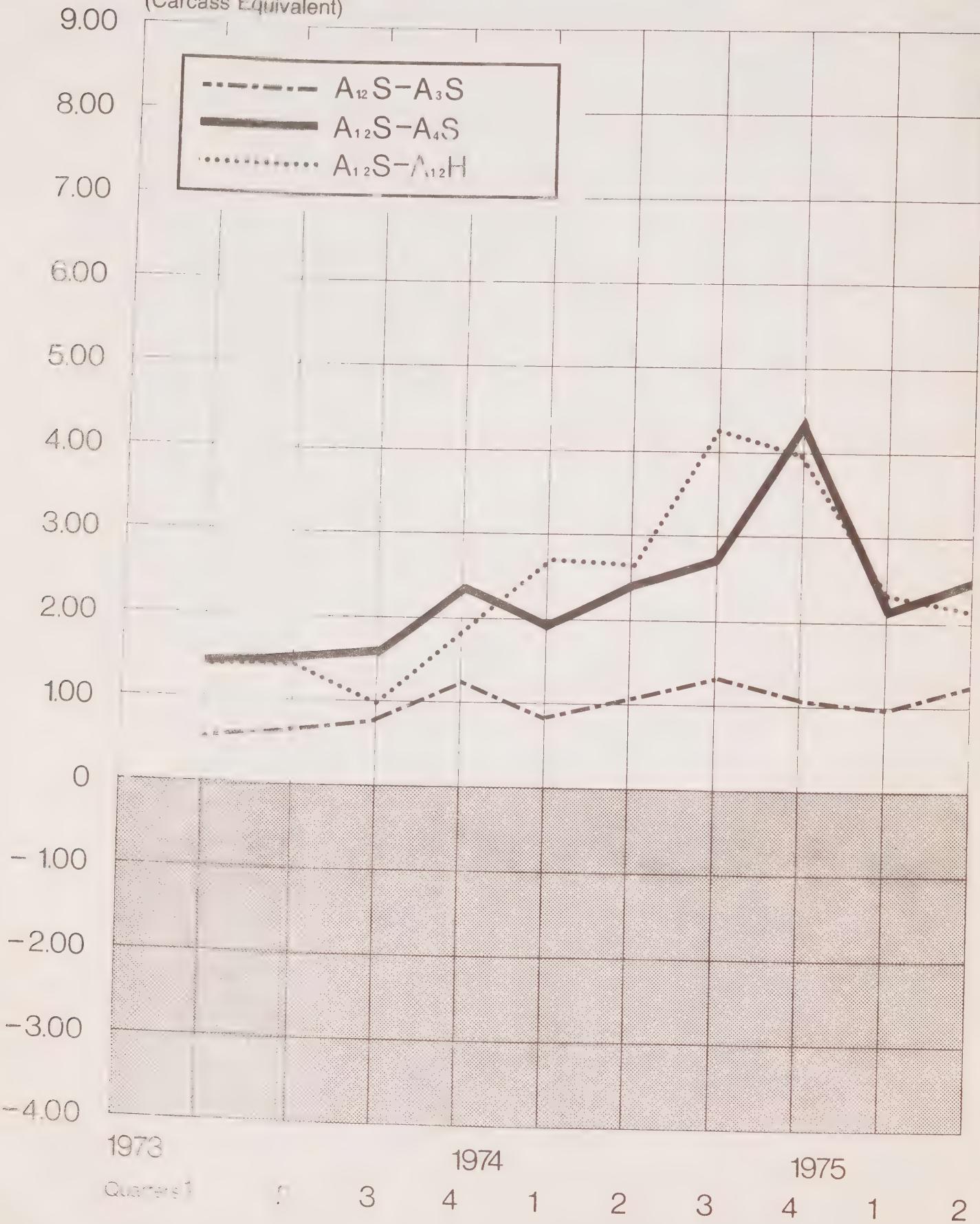
**MARITIME AND QUEBEC PRICE DIFFERENCES FOR A GRADE
CARCASSES**
January 1973 – June 1975
(Basis Quebec)

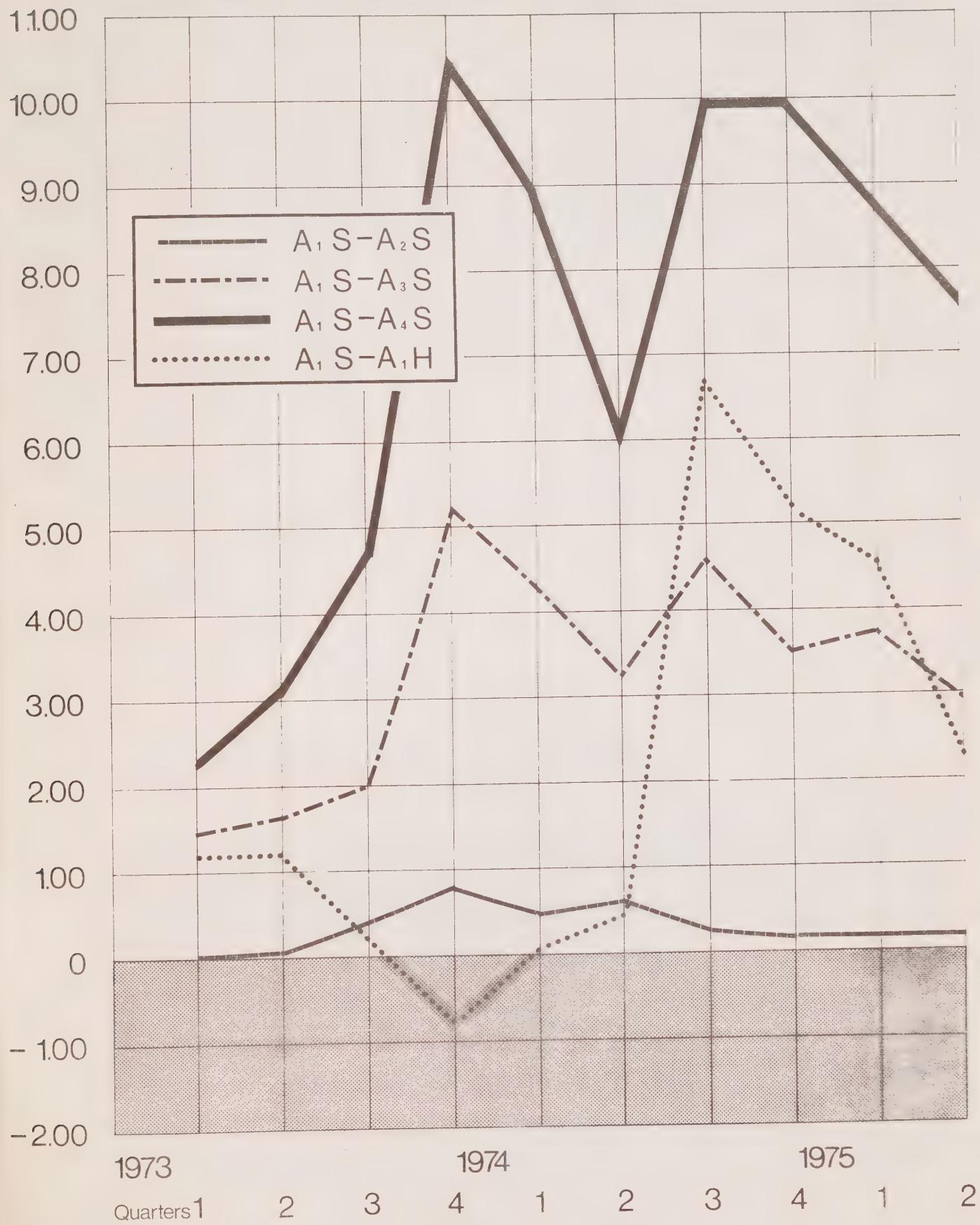


MONTREAL CARCASS MARKET A GRADE PRICE DIFFERENCES
January 1973 – June 1975

ALBERTA CARCASS MARKET A GRADE PRICE DIFFERENCES
January 1973 – June 1975

CALGARY LIVE MARKET A GRADE PRICE DIFFERENCES
January 1973 – June 1975
(Carcass Equivalent)



ONTARIO CARCASS MARKET A GRADE PRICE DIFFERENCES
January 1973 – June 1975

TORONTO LIVE MARKET A GRADE PRICE DIFFERENCES
January 1973 – June 1975
(Carcass Equivalent)

